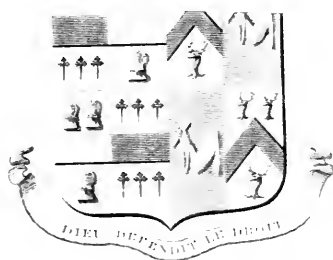
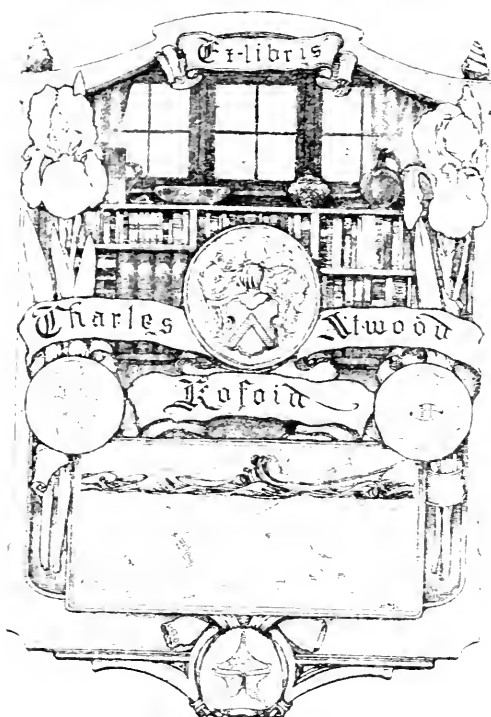


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REMARKS  
ON THE  
FREQUENCY AND FATALITY  
OF  
DIFFERENT DISEASES,  
&c.



REMARKS  
ON THE  
FREQUENCY AND FATALITY  
OF  
DIFFERENT DISEASES,  
PARTICULARLY  
ON THE PROGRESSIVE  
INCREASE OF CONSUMPTION:  
WITH  
OBSERVATIONS  
ON THE  
INFLUENCE OF THE SEASONS  
ON  
MORTALITY.

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BY WILLIAM WOOLLCOMBE, M.D.

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## PREFACE.

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IN submitting to the Public the result of his own inquiries concerning some points of Statistical Medicine, the design of the Author will be accomplished, if it shall be found that some useful addition has been made to the stock of authentic materials, some useful suggestions offered, conducive to the more successful investigation of subjects, which he deems of importance, of questions in which he thinks the interest of the Public intimately concerned.

A

Of the Tables, which constitute the essential part of the following pages, the first five have been formed from materials afforded by the register of the medical cases occurring at the Public Dispensary at Plymouth, in a period of seven years from the establishment of the Institution. In framing them the object has been, to exhibit the proportionate prevalence of different diseases, and the absolute and relative mortality resulting from them; as well as to afford grounds for instituting a comparison between the prevalence of diseases in different districts at the same period, and in the same district at different periods.

The space of time which they include, may perhaps be deemed too limited, to admit of the deduction of general conclusions with much confidence in their validity; yet their coincidence, in many in-

stances, with observations derived from more extended experience, may afford a presumption of their not being altogether unworthy of attention. Many deficiencies in their construction, which cannot be referred to this source of imperfection, will readily be noticed. To account for these in a general way it may be sufficient to observe, that the register of the cases was not made with any reference to the use to which it has been now applied. Its primary object was merely to keep in the view of the Physician the number and character of the cases immediately under his care; and to furnish the means of annually informing the Subscribers to the Institution of the extent to which their charity had been applied, and of the degree of benefit resulting from it. This will account for the deficiency observable at the end of the first Table, where the total number is made up by the addition of a

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considerable portion of cases, to which no distinctive appellations of disease have been assigned.

It will not be denied, that the inferences of the relation of diseases to each other, and the proportion of any one distemper to the whole number, must be affected by this omission ; yet the conclusions relating to the diseases of most importance, either as to their prevalence or their consequences, are comparatively little influenced by it ; since the omission of assigning names must generally have occurred in slight and unimportant disorders, with the exception of a few cases, where it may purposely have arisen from the obscurity in which the nature of the distemper was involved. Many of the cases unnamed may, with certainty, be referred to the class of eruptive diseases, and are so marked in the register ; the omission, in this instance,

arising from the uncertainty prevailing at the moment, as to the proper head to which they should be referred, according to the arrangement of Dr. Willan, whose nomenclature has been otherwise adhered to.

A strict adherence to nosological accuracy has not been aimed at. In general the names of diseases adopted are those assigned by Dr. Cullen ; in some instances they correspond with those employed by Sauvages. Where any term is used in a different or unusual sense, it is signified in a note subjoined. The inattention and irregularity in attendance of patients at Dispensaries, render precision in ascertaining their complaints often impracticable.

The valuable work of Dr. Heberden, on the increase and decrease of diseases, having in great measure suggested the

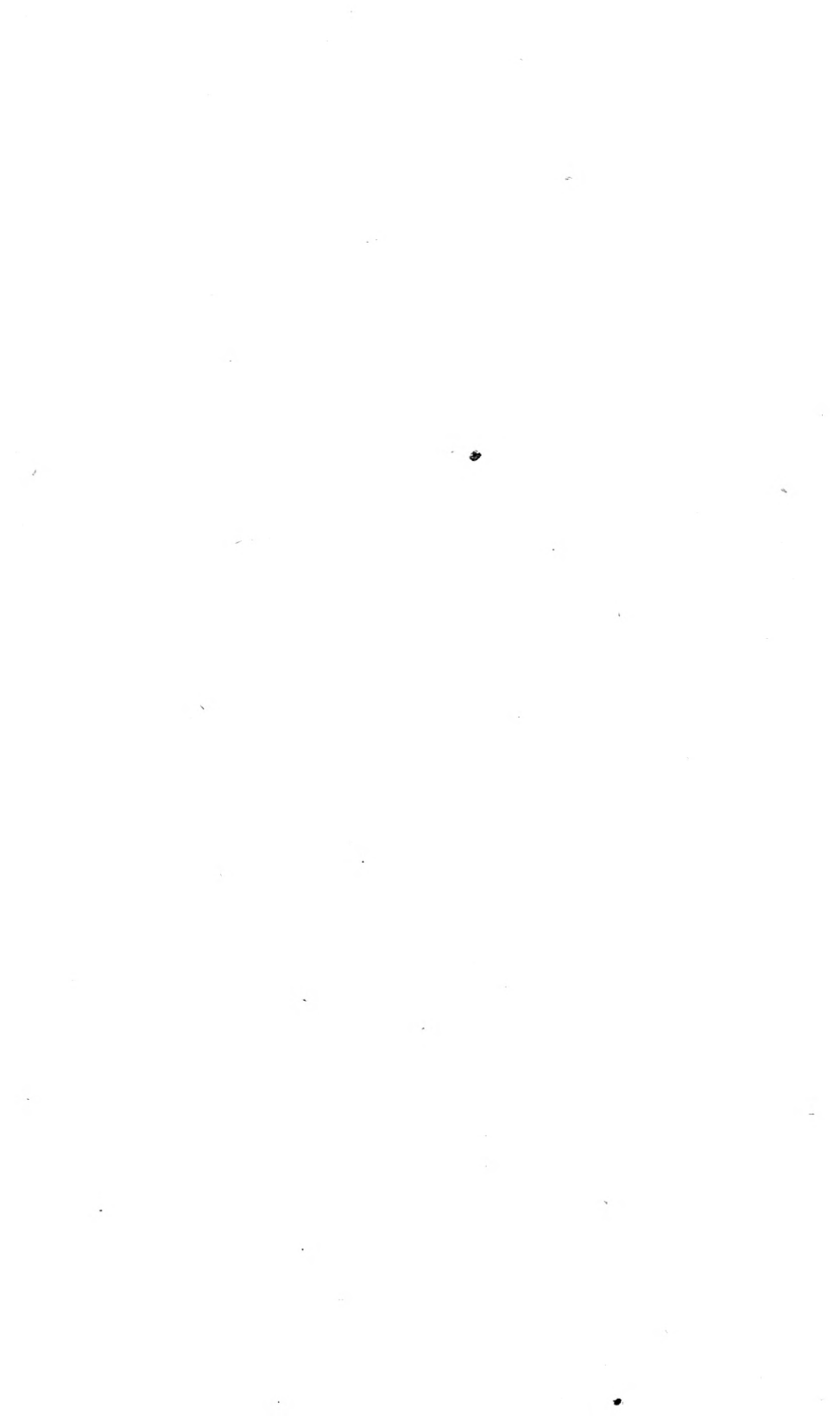
formation of these Tables, a comparison of the inferences deducible from them with his observations, naturally became a primary object. And if the following pages be found to contain any confirmation of the conclusions of that Author, they may derive from this circumstance a collateral claim to that attention, of which independently they might not be deemed deserving.

Several facts, and many grounds of comparison, have also been derived from Dr. Willan's Reports on the Diseases in London; a work abounding in useful and accurate information, and enriched with the practical observations of a discriminating and enlightened mind.

On two subjects the inquiry has been carried far beyond the limits of mere comparison. The desire of ascertaining with



more precision; than seems hitherto to have been attained, the extent of the prevalence of consumption, occasioned in the investigation of that point a minuteness, which will be excused by those who are impressed with the importance of the question. The inquiry into the influence of the seasons on disease and mortality, was also deemed sufficiently interesting to justify a more detailed examination of the evidence on which it rests. If the popular opinion on this point be erroneous, the error is not merely speculative, but of practical influence on the inhabitants of this country. Every attempt therefore to correct it may expect a favourable reception, and an attentive consideration.



**TABLE I.**  
**OF THE**  
**CASES OF PATIENTS**  
**ADMITTED AT THE**  
**PLYMOUTH PUBLIC DISPENSARY,**  
**FROM NOVEMBER 13, 1798,**  
**TO AUGUST 31, 1805.**



TABLE I.

Of the Cases of Patients admitted at the Plymouth Public Dispensary, from November 13, 1798,  
to August 31, 1805.

[The Asterisk prefixed to a number denotes a reference to the corresponding number in the notes subjoined to the Table.]

	DISEASES.	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
1	Abortus . . .	1	2	1		1			5			
2	Amaurosis . . .		1	2	1			1	5			
3	Amenorrhæa . . .	19	15	32	15	22	17	14	134			
4	Anasarca . . .	6	17	22	15	10	12	11	93	9	1 in 10	1 to 36
5	Angina Pectoris . . .			1					1			
6	Aphonia . . .					1			1			

	DISEASES.	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
7	Apltha . . .		1	2		1			4	1	1 in 4	1 to 321
8	Apoplexia . . .	1	3	1	1	2	2	2	12	10	10 in 12	1 to 32
*9	Apoplexia Hydrocephalica	1		3	1		1		6	4	2 in 3	1 to 80
10	Arthritis . . .	1		1			1		3			
11	Arthropuosis . . .							1	1			
12	Ascites . . .	4	6	4	1		2	2	19	4	1 in 5	1 to 80
*13	Asthenia . . .	4	25	22	16	18	15	10	110			
14	Asthma . . .		2	2	2	4	1	2	13	1	1 in 13	1 to 321
15	Atrophia . . .	2				2	1		5	4	4 in 5	1 to 80
16	Bronchocle . . .					1	1		2			



	DISEASES.	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
29	Cynanche trachealis .			1				1	2	1	1 in 2	1 to 321
30	Cynanche parotidea .	1		1	1		3	1	7			
31	Diabetes . . .			1	1				2			
32	Diarrhea . . .	23	39	48	34	46	35	31	256	9	1 in 28	1 to 35
33	Dyscoeca . . .	1		2	1	1		1	6			
34	Dysenteria . . .		1	3		2	1		7			
35	Dysmenorrhœa .	1			1		2	1	5			
36	Dyspepsia . . .	34	31	27	22	13	43	41	211			
37	Dysphagia . . .		1			1			2			
38	Dyspnœa . . .	31	56	31	28	28	31	24	229	16	1 in 14	1 to 20



*39	Dysuria	.	.	.	1	3	5	6	3	4	2	24	3	1 in 8	1 to 107
40	Ecthyma	.	.	.	1	1	1			5		7			
41	Enteritis	.	.	.					1			1	1	1 in 1	1 to 321
42	Enuresis	.	.	.	3	3		3	1	1		11			
43	Epilepsia	.	.	.	2	8	9	3	6	4	3	35	1	1 in 35	1 to 321
44	Epistaxis	.	.	.			1	1	1	2	1	6			
45	Erysipelas	.	.	.		5	2	3		1		11			
46	Erythema	.	.	.	1	1	1		1	3		7	1	1 in 7	1 to 321
*47	Febris	.	.	.	27	52	79	36	34	20	31	269	29	1 in 13	1 to 16
*48	Gangrena	.	.	.							1	1	1	1 in 1	1 to 321
*49	Gastrodynia	.	.	.	5	3	10	7	5	7	4	41			
50	Gonorrhoea	.	.	.		7	1		1	3	2	11			

	DISEASES.	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
51	Hæmatemesis . . .	1	1		3	1	1		7			
52	Hæmaturia . . .		1						1			
53	Hæmoptysis . . .	2	5	9	5	1	4	1	27	2	1 in 13	1 to 160
54	Hæmorrhoids . . .	5	3	3	5	6	1	2	25			
55	Hæctica lactantium . . .	1	2	1		1	1		6			
56	Hepatitis . . .				1				1			
57	Hepatitis chronica . . .		1			1			2			
58	Hernia . . .	1	2	1	3		2	2	11	2	2 in 11	1 to 160
59	Herpes . . .		2		5				7			
*60	Ilydarthrus . . .	2		1			4	3	10			

61	Hydrocephalus	.	.	1	1	1	3					
*62	Hydrometra	.	.	1			1					
63	Hydrothorax	.	.	2	1	1	3	3	4	2 in 5	1 to 80	
64	Hypochondriasis	.	.	1	1	3						
*65	Hysteralgia	.	.		1							
66	Hysteria	.	.	5	13	11	7	1	9	5	51	
67	Icterus	.	.	3	6	5	6	1	3	3	27	
68	Impetigo	.	.							3	3	
69	Ischuria	.	.	2	2			1	2	1	8	1 to 321
70	Lieken	.	.				3			1	4	
71	Lithiasis	.	.				2	1			3	
72	Lepra	.	.	1	2	4			2	1	10	

	DISEASES.	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths fr in each disease to the whole mortality.
73	Leucorrhœa . . .	3	8	3	5	2	10	3	34			
74	Mania & Melancholia .		1	1		1			3			
*75	Melena . . .	3			1				4	2	1 in 2	1 to 160
76	Menorrhagia . . .	8	9	10	4	12	8	4	55	3	1 in 18	1 to 107
77	Nephralgia . . .		9		2			2	13			
78	Obstipatio . . .	3	2			5	8	6	24			
79	Odontalgia . . .		2		1				3			
*80	Oedema puerperale .	2	1			1	1	1	6			
81	Ophthalmia . . .	8	11	13	5	10	16	15	83			
82	Palpitatio . . .		1		1		1	2	5	1	1 in 5	1 to 321

	33	Paralysis . . .	6	7	8	8	8	7	4	40			
	84	Peritonitis puerperarum .		1						1			
	85	Pertussis . . .	19	6	21	4	7	3	60	9	1 in 7	1 to 36	
	86	Phthisis . . .	27	26	24	32	33	32	198	75	1 in 2.6	1 to 4.3	
	87	Pica . . .			1	1			2				
	*88	Pleurodyne . . .	5	11	9	6	5	4	48				
	89	Pneumonia . . .	9	21	24	19	18	17	126	21	1 in 6	1 to 15	
	90	Pneumonia notha . . .		3	6				12	1	1 in 12	1 to 321	
	*91	Pompholyx . . .				1			1				
	92	Porrigo . . .		3	11	4	6	5	36				
	93	Prolapsus ani . . .				1			2				
	94	Prolapsus uteri . . .	2	3	1	3	2	1	12				

	DISEASES.							Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
		1799	1800	1801	1802	1803	1804				
95	Varigo . . . . .			2	1	6	2	1	12		
96	Psoriasis . . . . .	6	2	2	4	6	2	1	23		
97	Pyralismus . . . . .	1	1			1			3		
98	Purpura . . . . .	1		1			1		3		
99	Quartana . . . . .							1	1		
100	Rachitis . . . . .	3	8	3	4			1	19	1 in 19	1 to 321
101	Rheumatismus acutus . . . . .	13	16	10	9	11	12	17	88		
102	Rheumatismus chronicus . . . . .	20	32	17	17	19	32	23	160		
103	Rubeola . . . . .	6	3	40	3	2	15	2	71	1 in 12	1 to 53
104	Scabies . . . . .	1	13	15	8	19	4	4	64		

*105	Scarlatina cynanchica	.	1	5	1	1	1	17	38	63	5	1 in 13	1 to 64
106	Schirrhus mammae	.		2			3	1		6			
107	Scrofula	.	7	8	6	3	3	5	9	41			
*108	Stomacae	.	1			1	1			3			
109	Strophilus	.		1			1			2			
110	Syphilis	.	11	10	18	22	14	6	4	85	2	1 in 42	1 to 160
111	Tabes	.	2	4	7	1	6	4	7	31	9	1 in 3.5	1 to 36
112	Tertiana	.	3		1	2		3		9			
*113	Tetanus	.			1					1	1	1 in 1	1 to 321
114	Trichiasis	.		1						1			
115	Trichoma	.		1						1			
116	Tympanites	.	1						2	3	2	2 in 3	1 to 160

	DISEASES,	1799	1800	1801	1802	1803	1804	1805	Total.	Number of deaths.	Proportion of deaths from each disease.	Proportion of deaths from each disease to the whole mortality.
117	Typhus . . . .	10	36	56	54	31	26	5	218	36	1 in 6	1 to 9
118	Urticaria . . . .			1	3		2	1	8			
119	Variola . . . .	7	16	24	18		41	6	112	46	1 in 23	1 to 7
120	Varix . . . .	1							1			
121	Vermes . . . .	9	8	13	9	7	2	2	50			
Total of cases enumerated in the preceding columns . . .		438	682	720	561	541	585	483	4010	321		
Total of cases not included in the preceding columns, the names of the diseases having been omitted in the Register of the Dispensary		21	56	80	136	69	7	30	599			
Total . . .		459	738	800	697	610	592	513	4409	321		



## NOTES ON TABLE I.

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9. *Apoplexia Hydrocephalica*.—By the adoption of this appellation for the hydrocephalus acutus, vel internus, of the earlier authors, it is not intended to subscribe to the propriety of its application. For this species of inflammation of the brain, peculiarised by its termination in effusion, some distinctive name seems wanting. Is hydrocephalitis admissible?

13. *Asthenia*.—Sauvages Nos. Meth. cl. 6. gen. 21. See also observations referrible to this title in Willan's Reports on the Diseases in London, p. 52.

17, 18. *Caligo corneæ*, *Caligo lentis*.—The first species includes those cases of obscuration of the transparent cornea, which are the fre-

quent consequences of ophthalmia, and are distinguished by the terms macula, leucoma, &c. The second comprehends cataract.

19. *Cancer scroti*.—This case occurred in a chimney-sweeper of advanced age; the ulcerated part was of small extent, and was removed by excision.

21. *Catarrhus epidemicus*.—Influenza.

24. *Chorea*.—This has been said to be a frequent disease in England. In Scotland it is of rare occurrence. The number of cases in the present instance has a tendency to confirm the former observation. In one of these instances the disease had its origin distinctly in terror, in a boy of eleven years of age, in whom it first occurred during Lord Duncan's action with the Dutch fleet. In some of these cases evident benefit appeared to be derived from the continued use of nitrat of silver, which has almost invariably disappointed my hopes in epilepsy. This might reasonably be expected from a due consideration of the nature of the two diseases, and of the probable mode of operation of the medicine.

39. *Dysuria* —To account for the fatal cases in this instance it may be mentioned, that

under this title are included diseases of the bladder, arising from different causes. See Cullen Nos. Meth. gen. 124, sp. 5 & 6.

47. *Febris*.—Under no title in the list is the arrangement so liable to exception as in this, to which so considerable a number of cases has been referred; and in the contemplation of it was made the previous remark, that nosological accuracy had not been aimed at. A large proportion of these cases consists of such, as by reporters are frequently styled “acute diseases of children;” a vague and unsatisfactory title, but possibly warranted by the imperfect state of our knowledge of their complaints. To these must be added the slighter febrile affections of adults, arising from cold, or other causes; and those cases, in which the symptoms of fever, being the chief object of practice, were principally regarded, the primary disease being at the time of admission doubtful or obscure.

48. *Gangræna*.—Mortification of the toes and feet. Pott’s Works, &c.

49. *Gastrodynia*.—Perhaps these cases should in strictness have been referred to dyspepsia; but the symptom by which they are here charac-

terized is often so predominant, as to entitle them to a distinctive appellation. In many instances of this most pertinacious complaint, which occurs almost exclusively in females, the pain of the stomach has entirely arisen from an inordinate use of tea, and has ceased on discontinuing this beverage.

60. *Hydarthrus*.—Disease of the knee-joint—white swelling.

62. *Hydrometra*.—Sauvages. Gen. 289, sp. 2. *Hydrometra gravidarum*.

65. *Hysteralgia*.—Sauvages. Gen. 209, sp. 6.

75. *Melæna*.—Of the four cases here set down, two are not strictly referrible to the genus *melæna*, the characteristic hæmorrhage not having in those cases occurred. They are so associated, in defect of a more appropriate situation, because the disease in those instances was deemed to consist in that condition of the vessels of the system of the vena portarum, which precedes the hæmorrhage in *melæna*. They were the cases also which terminated fatally.

80. *Oedema puerperale*.—White—Trye—Willan, 321—Hull on *Phlegmatia dolens*.

88. *Pleurodyne*.—The reference of so many cases to this title of Sauvages, which Cullen has not thought entitled to a generic distinction, is another instance of no very strict attention to nosological precision. It is designed in this place to include some cases, which ought perhaps to have been referred to rheumatism, to which Cullen assigns all the species of Sauvages; some, which were sequels of pneumonic inflammation; and others, in which neither the precise seat, nor nature of the complaint, was easily to be ascertained.

91. *Pompholyx*.—In a recent case of this kind, which has subsisted many months, the vesications have occupied in succession almost every part of the surface; chiefly the breasts at first; latterly the belly, thighs, and feet. That the stomach, uterus, ovaria, and urinary bladder, have also participatēd in the disease, has been rendered highly probable by the occurrence of disordered function of those organs. The disease supervened a sudden suppression of the menstrual discharge, which has not been restored. Sometimes blood, sometimes a watery fluid, is thrown up from the stomach. A considerable and painful tumour has taken place in the left hypogastrium; and no urine has been discharged during several

weeks without the aid of the catheter. In some few instances of this disease, described under the name of chronic pemphigus, there has been suspected to subsist a connexion with disorder of the uterine functions, in the opposite conditions of menorrhagia and amenorrhæa.

98. *Purpura*.—Phænigmus petechialis, Sauv. 308—Hæmorrhæa, Adair Dissert. Inaug. de Hæmorrhæa petechiali, Edin. 1789—Petechiæ sine febre—Purpura, Willan's Reports, p. 90.

105. *Scarlatina*.—The identity of scarlatina anginosa and cynanche maligna, being admitted, there can be little hesitation in classing the disease with the exanthemata, rather than with the phlegmasiæ; and consequently of employing scarlatina, rather than cynanche, as the generic term.

108. *Stomacace*.—Sauvages. Gen. 241, sp. 1.

113. *Tetanus*.—In a recent case of this disease, the event was favourable. In the history of it the following circumstances seemed worthy of attention. The disease arose from severe contusion of the fore-finger, commencing about four weeks after the infliction of the injury. At the expiration of another week,

when assistance was first applied for, there was no external wound, but the last joint was considerably enlarged. From the amputation of the finger some degree of alleviation of the symptoms was the immediate consequence. From the combined and continued use of wine, bark, and affusion of cold water, decided benefit was judged to be derived. From the application of tincture of tobacco to the external fauces, the rigidity of the muscles was for a time evidently diminished, and pain mitigated. From opium, in doses from one to three hundred drops, and to the extent of two ounces and a half of the tincture, in seventy-two hours, no benefit was apparently derived; and its effect in producing distressing dysuria could not be doubted. From the use of digitalis, by which the frequency of the pulse was reduced, some advantage seemed to be gained. The active treatment of the complaint occupied three weeks: the recovery was complete. The patient was a strong man, about twenty-five years of age. In the conduct of the case the narrator was assisted by the judicious advice of his friend and colleague, Dr. Remmett, Physician Extraordinary to the Institution in which it occurred.

114. *Trichiasis*.—"Est directio ciliorum versus oculi bulbum." Plenck. de Morbis Oculorum.





# TABLE II.

OF THE

DISEASES

CONTAINED IN TABLE I.

ARRANGED IN THE ORDER OF THEIR FREQUENCY OF  
OCCURRENCE.



TABLE II.

1	Feveris	.	.	269	9	Phthisis	.	.	198
2	Diarrhœa	.	.	256	10	Catarrhus	.	.	142
3	Dyspepsia	.	211	252	11	Pneumonia	.	126	138
4	Gastrodynia	.	41		12	Pneumonia notha	.	12	
5	Rheumatismus acutus	88	248	13	13	Aneurthra	.	.	134
6	Rheumatismus chronicus	160		14	14	Anasarca	.	93	122
7	Dyspnœa	.	.	229	15	Ascites	.	19	
8	Typhus	.	.	218	16	Hydrothorax	.	10	

17	Variola	.	.	112	41	Tabs	.	.	31
18	Asthenia	.	.	110	42	Hæmoptysis	.	.	27
19	Ophthalmia	.	83	105	43	Icterus	.	.	27
20	Caligo corneæ	.	22		44	Hæmorrhoids	.	.	25
21	Syphilis	.	85	99	45	Dysuria	.	.	24
22	Gonorrhæa	.	14		46	Obstipatio	.	.	24
23	Rubeola	.	.	71	47	Psoriasis	.	.	23
24	Scabies	.	.	64	48	Cynanche tonsillaris	.	.	22
25	Scarlatina cynanchica	.	.	63	49	Rachitis	.	.	19
26	Pertussis	.	.	60	50	Asthma	.	.	13
27	Menorrhagia	.	.	55	51	Nephralgia	.	.	13
28	Hysteria	.	.	51	52	Apoplexia	.	.	12

29	Vermes	.	.	50	53	Prolapsus uteri	.	12
30	Pleurodyne	.	.	48	54	Prurigo	.	12
31	Cephalaea	.	.	46	55	Enuresis	.	11
32	Cholera	.	.	41	56	Erysipelas	.	11
33	Scrofula	.	.	41	57	Hernia	.	11
34	Catarrhus epidemicus	.	.	40	58	Chorea	.	10
35	Paralysis	.	.	40	59	Hydarthras	.	10
36	Colica	.	33	36	60	Lepra	.	10
37	Colica Pictorum	.	3		61	Convulsio	.	9
38	Porrigo	.	.	36	62	Tertiana	.	9
39	Epilepsia	.	.	35	63	Ischuria	.	8
40	Leucorrhœa	.	.	34	64	Urticaria	.	8

65	Cynanche parotidæa . . .	7	89	Hepatitis . . .	1	3
66	Dysenteria . . .	7	90	Hepatitis chronica . . .	2	3
67	Ecthyma . . .	7	91	Impetigo . . .	3	3
68	Erythema . . .	7	92	Lithiasis . . .	3	3
69	Hæmatemesis . . .	7	93	Mania & Melancholia . . .	3	3
70	Herpes . . .	7	94	Odontalgia . . .	3	3
71	Apoplexia hydrocephalica . . .	7	95	Purpura . . .	3	3
72	Dysæcoæ . . .	6	96	Ptyalismus . . .	3	3
73	Epistaxis . . .	6	97	Stomacæ . . .	3	3
74	Hæctica lactantium . . .	6	98	Tympanites . . .	3	3
75	Oedema puerperale . . .	6	99	Bronchocæ . . .	2	2
76	Schirrhæus mammae . . .	6	100	Cynanche trachealis . . .	2	2

77	Abortus	.	.	5	101	Diabetes	.	.	2
78	Amaurosis	.	.	5	102	Dysphagia	.	.	2
79	Atrophia	.	.	5	103	Pica	.	.	2
80	Dysmenorrhœa	.	.	5	104	Prolapsus ani	.	.	2
81	Hypochondriasis	.	.	5	105	Strophilus	.	.	2
82	Palpitatio	.	.	5	106	Angina pectoris	.	.	1
83	Aphtha	.	.	4	107	Aphonia	.	.	1
84	Lichen	.	.	4	108	Arthroposis	.	.	1
85	Melana	.	.	4	109	Cancer scroti	.	.	1
86	Arthritis	.	.	3	110	Enteritis	.	.	1
87	Callus lentis	.	.	3	111	Gangræna	.	.	1
88	Hydrocephalus	.	.	3	112	Hæmaturia	.	.	1

113	Hydrometra . . .	1	118	Tetanus . . .	1
114	Hysteralgia . . .	1	119	Trichiasis . . .	1
115	Peritonitis puerperarum . . .	1	120	Trichoma . . .	1
116	Pompholyx . . .	1	121	Varix . . .	1
117	Quartana . . .	1	Total . . .		<u>4010</u>



# TABLE III.

OF THE

## DISEASES

CONTAINED IN TABLE I.

IN WHICH FATAL EVENTS OCCURRED,

ARRANGED IN THE ORDER OF THEIR FATALITY  
RELATIVELY TO EACH OTHER.



TABLE III.

1	P <sup>U</sup> TH <sup>U</sup> S <sup>U</sup> S	.	.	75	10	A <sup>P</sup> OP <sup>L</sup> E <sup>X</sup> IA	.	.	10
2	V <sup>A</sup> R <sup>I</sup> O <sup>L</sup> A	.	.	46	11	D <sup>I</sup> ARR <sup>H</sup> ÆA	.	.	9
3	T <sup>Y</sup> PH <sup>U</sup> S	.	.	36	12	P <sup>E</sup> RT <sup>U</sup> SS <sup>U</sup> S	.	.	9
4	P <sup>U</sup> E <sup>M</sup> ON <sup>I</sup> A	.	.	22	13	T <sup>A</sup> B <sup>E</sup> S	.	.	9
5	F <sup>E</sup> BR <sup>I</sup> S	.	.	20	14	R <sup>U</sup> BE <sup>O</sup> LA	.	.	6
6	A <sup>N</sup> A <sup>S</sup> A <sup>R</sup> C <sup>A</sup>	.	.	9	15	S <sup>C</sup> A <sup>R</sup> L <sup>A</sup> T <sup>I</sup> N <sup>A</sup>	C <sup>Y</sup> N <sup>A</sup> N <sup>C</sup> H <sup>I</sup> C <sup>A</sup>	.	5
7	A <sup>S</sup> C <sup>I</sup> T <sup>E</sup> S	.	.	4	17	A <sup>P</sup> OP <sup>L</sup> E <sup>X</sup> IA	HY <sup>D</sup> R <sup>O</sup> C <sup>E</sup> P <sup>H</sup> A <sup>L</sup> I <sup>C</sup> A	.	4
8	H <sup>Y</sup> D <sup>R</sup> O <sup>T</sup> H <sup>O</sup> R <sup>A</sup> X	.	.	4		A <sup>T</sup> R <sup>O</sup> P <sup>H</sup> IA	.	.	4
9	D <sup>Y</sup> S <sup>P</sup> N <sup>Æ</sup> A	.	.	16	18	C <sup>O</sup> N <sup>V</sup> U <sup>L</sup> S <sup>I</sup> O	.	.	3

19	Dysuria	.	.	3	30	Colica	.	.	1
20	Menorrhagia	.	.	3	31	Cynancho trachealis	.	.	1
21	Hæmoptysis	.	.	2	32	Enteritis	.	.	1
22	Hernia	.	.	2	33	Epilepsia	.	.	1
23	Melena	.	.	2	34	Erythema	.	.	1
24	Syphilis	.	.	2	35	Gangrana	.	.	1
25	Tympanites	.	.	2	36	Ischuria	.	.	1
26	Aphtha	.	.	1	37	Palpitatio	.	.	1
27	Asthma	.	.	1	38	Rachitis	.	.	1
28	Catarrhus epidemicus	.	.	1	39	Tetanus	.	.	1
29	Cholera	.	.	1	Total				321

## TABLE IV.

OF THE SAME

DISEASES AS IN TABLE III.

ARRANGED IN THE ORDER OF THEIR FATALITY,

RELATIVELY TO THE NUMBER OF CASES OF EACH DISEASE, AS STATED IN THE LAST COLUMN OF TABLE I.

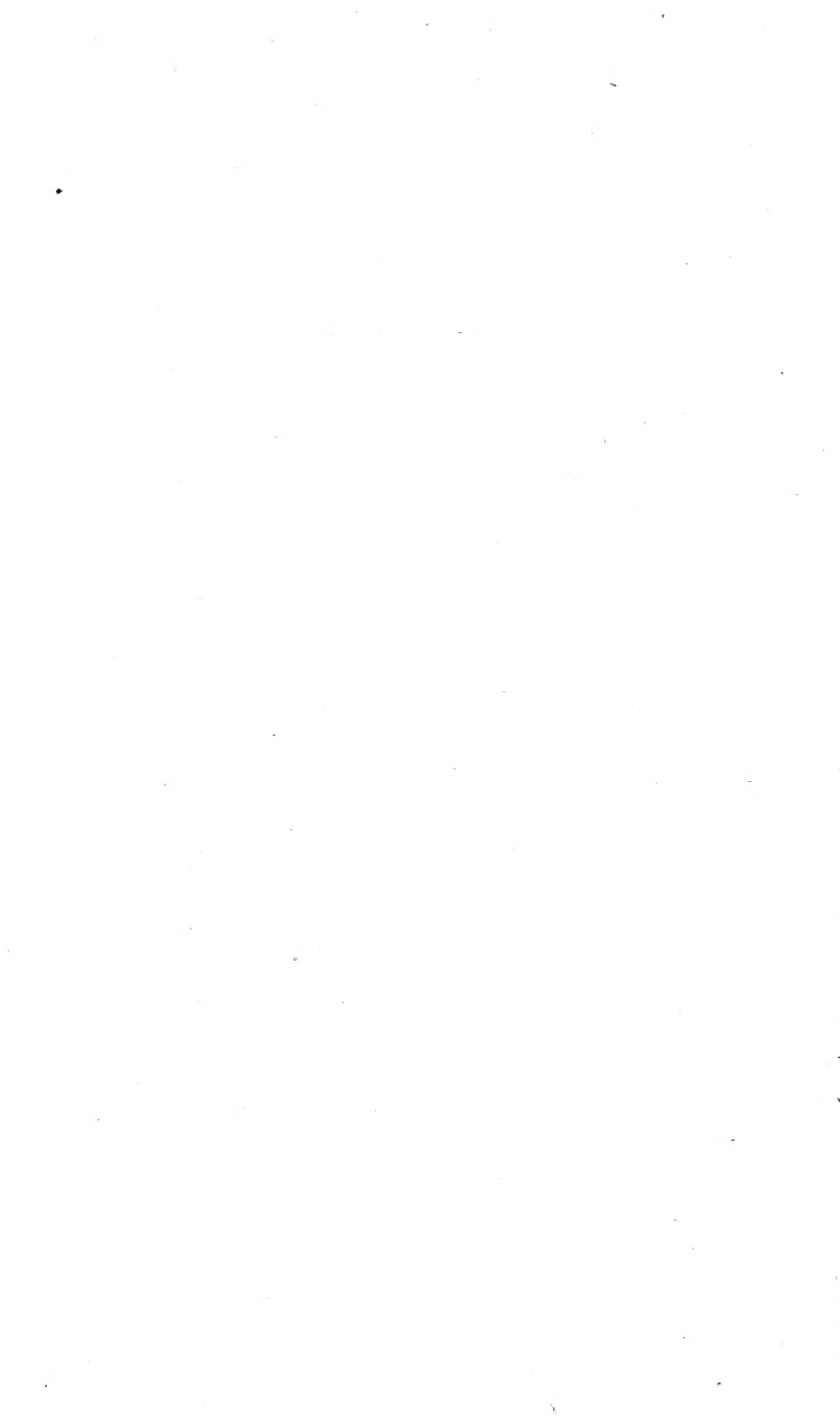


TABLE IV.

1	ENTERITIS . . .		10	Variola . . .	1 in 2.43
2	Gangrena . . .	1 in 1	11	Hydrothorax . . .	1 in 2.5
3	Tetanus . . .		12	Phthisis . . .	1 in 2.61
4	Apoplexia . . .	1 in 1.2	13	Convulsio . . .	1 in 3
5	Atrophia . . .	1 in 1.25	14	Tabes . . .	1 in 3.44
6	Apoplexia hydrocephalica	1 in 1.5	15	Aphtha . . .	1 in 4
7	Tympanites . . .		16	Palpitatio . . .	1 in 4.25
8	Melæna . . .	1 in 2	17	Ascites . . .	1 in 4.75
9	Cynanche trachealis . . .		18	Hernia . . .	1 in 5.5

19	Typhus . . .	1 in 6	30	Hamoptysis . . .	1 in 13.5
20	Pneumonia . . .	1 in 6.3	31	Dyspnæa . . .	1 in 14.3
21	Pertussis . . .	1 in 6.66	32	Menorrhagia . . .	1 in 18.3
22	Erythema . . .	1 in 7	33	Rachitis . . .	1 in 19
23	Dysuria . . .	} 1 in 8	34	Diarrhæa . . .	1 in 28.2
24	Ischuria . . .		35	Colica . . .	1 in 33
25	Anasarca . . .	1 in 10.3	36	Epilepsia . . .	1 in 35
26	Rubeola . . .	1 in 11.8	37	Catarrhus epidemicus	1 in 40
27	Scarlatina cynanchica .	1 in 12.6	38	Cholera . . .	1 in 41
28	Asthma . . .	1 in 13	39	Syphilis . . .	1 in 42
29	Febris . . .	1 in 13.45			



TABLE V.

OF THE

PROPORTION OF FATAL CASES,

IN EACH OF THE SEVEN YEARS,

FROM NOVEMBER 13, 1799,

TO AUGUST 31, 1805.

Years.	Fatal Cases.	Total Cases.	Proportion.
1799	36	459	1 in 12.5
1800	44	738	1 in 16.5
1801	52	800	1 in 15.4
1802	54	697	1 in 12.8
1803	42	610	1 in 14.5
1805	50	592	1 in 11.8
1806	43	513	1 in 12
7	321	4409	1 in 13.7



PART I.

OF THE

FREQUENCY AND FATALITY

OF

DIFFERENT DISEASES,

PARTICULARLY OF THE

PROGRESSIVE INCREASE OF CONSUMPTION.



## PART I.

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IN subjoining a few remarks to the preceding tables, it is not intended to enter into a regular or detailed examination of their correspondence with, or variation from, similar documents; but merely to advert to some leading particulars somewhat more fully, than could conveniently be done in the notes attached to the tables themselves.

In considering the prevalence of diseases, it will be obvious that those which, in an extensive sense of the term, may be classed under the title of pulmonary disorders, claim the first attention, no less from their number, than from their fatality.

Whether the proportion of these complaints be notwithstanding less in this\*, than in other parts of the island, as from the reputed mildness of our western air might naturally be expected, a deficiency of adequate information precludes any attempt to determine. But an inspection of these tables will, it is feared, afford little or no ground to impeach the correctness of those statements, in which the mortality, occasioned by the chief of this class of diseases, has been estimated at a rate so high, as almost to exceed belief, and to cast a shade of suspicion on the credibility of any conclusions deduced from them. If however the facts, hereafter adduced, should be found inconsistent with a claim to any considerable exemption from the ravages of pulmonic distempers, it will scarcely be denied, that much less extensive, than from local considerations might have been expected, has been the prevalence of another disease, the destructive influence of which has of late

\* The south-west part of Devonshire, in the vicinity of Plymouth.

been an object of much and fortunate attention in several populous towns in the kingdom.

The predominance of PULMONARY COMPLAINTS will be evident from an inspection of the first and second tables. The proportion of cases of this description, extensively taken, will be found to be to the whole as 1 to 5 ; and if the cases referred to the heads catarrhus, influenza, and pleurodyne, be excluded, the proportion resulting from the remainder, viz. asthma, dyspnæa, hæmoptysis, pertussis, phthisis, and pneumonia, will be as 1 to 6-7. If influenza be excluded, on account of its occasional and uncertain occurrence, and pleurodyne for the reasons which may be collected from the note on that title in the first table ; while, on the contrary, catarrh is retained, because the cases of this complaint, admitted at a dispensary, are likely to be of the severer kind, and bordering upon a more formidable disease ; the relation subsisting between pulmonary, and all other complaints collectively, may then be stated as 1 to 5-4.

The importance of pulmonic complaints, thus evinced by their proportionate prevalence, is still more forcibly demonstrated by contemplating their proportional fatality. From the third table it may be collected, that this proportion is as 1 to 2-5. From the result of his extensive practice, public and private, mentioned in his Reports on the Diseases in London, in confirmation of the conclusions deducible from the bills of mortality, Dr. Willan states the relative fatality of pulmonic distempers, exclusively of whooping-cough, and cough succeeding measles, to have been about 1 to 3. If the deaths from those sources had not been excluded, the subsisting relation would then have been precisely similar to that just stated. On an average of six years, the proportion deduced from the bills of mortality is as 1 to 3-1, which is probably less than it ought to be, owing, as it may be suspected, to an error, diminishing the deaths from pleurisy. From the very trifling number of deaths attributed to this disease, it seems probable, that cases of pneumonia are very commonly classed with fevers.



In considering the prevalence and ravages of pulmonary disorders, in general our attention is irresistibly directed to the FREQUENCY AND FATALITY OF PULMONARY CONSUMPTION.

The relative occurrence of phthisis appears, from the first table, to be as 1 to 22-27 ; and on an average of three years, in Dr. Willan's practice, it is found to have been as 1 to 29. Of its relative occurrence in other places data are wanting, on which to institute a comparison ; but of its relative fatality the following instances have been collected. From a due consideration of these it will too certainly appear that no exaggeration can be ascribed to that article in the bills of mortality, which records the desolating effects of this insidious disease, the baleful influence of which is probably extending in constant progression over the British islands, and countervailing that gradual diminution of the portion of human affliction arising from disease, which, we have reason to hope, is otherwise effecting by

the combined operation of various causes ; among which the happy discoveries in preventive medicine, that mark the close of the past century, claim a distinguished share \*.

\* May not the discovery of the cow-pock, if it should ultimately effect the extermination of the small-pox, which it may do when the prejudices of mankind shall permit, be wilemed rather on account of the influence here ascribed to it in diminishing human suffering, than on account of its effect in diminishing human mortality ? Since disease is one of the appointed checks to excessive population, and the plan of Providence in the creation of human life requires the termination of the existence of one-third of its creatures, before they have attained the age of two years, it may be doubted whether the annihilation of so efficient an instrument as small-pox can be admitted, without the substitution of some other equally destructive malady. The substituted malady may indeed be productive of less collateral affliction, than the loathsome distemper whose place it supplies. But granting that no direct substitute should arise, it will not follow that disease in general will be deprived of its accustomed share in checking population ; and if it be not, the only difference will be in the proportion of victims submitted to other disorders. The infant rescued from small-pox, may be rescued only to perish in childhood by measles or scarlatina, or be preserved to swell the list of youthful victims to the insatiate maw of consumption. Yet in estimating the afflictive effects of a disease on mankind, its absolute fatality may

The following table consists of two parts. In the first part are selected, from the bills of mortality, the absolute and relative numbers of deaths from consumption, at different periods, in the course of the last century and half; in the second part are collected a few instances, casually obtained, of similar mortality in different places in the kingdom, during the latter part of the past century.

be a very subordinate consideration, as might be exemplified in the instance of cancer. Much depends on the condition and relations of the persons obnoxious to it. The mortality from consumption and small-pox being supposed equal, and inoculation yet undiscovered, if superior power were to propose the annihilation of one or other of these distempers, no competent judge of their effects, actuated by benevolent motives, would hesitate, I presume, to solicit the extermination of the former. This speculation on its influence on population is totally foreign from the question of the merits and advantages of vaccination, which, in my estimation, are placed beyond all cavil. Perhaps to the speculation itself it may be quite sufficient to oppose the reply, a little altered, of the Princess to Rasselas, "How the world is to be de-peopled is not my care, and needs not be your's."

TABLE VI.—PART I.

Bills of Mortality.	Deaths from Consumption.	Annual Average.	Total Mortality.	Proportional Mortality from Consumption.
17 years, 1650 — 1656	17,642	2,520	80,438	1 to 4. 6
15 years, 1696 — 1700	17,044	3,408	100,029	1 to 5. 8
17 years, 1746 — 1752	30,842	4,406	168,276	1 to 5. 4
25 years, 1763 — 1767	21,563	4,312	119,024	1 to 5. 5
30 years, 1790 — 1799	50,480	5,048	196,705	1 to 3. 8927
25 years, 1795 — 1799	24,161	4,832	93,776	1 to 3. 8
16 years, 1795 — 1800	29,864	4,977	116,338	1 to 3. 9
			13810	
			113,028	1 to 3. 8

<sup>1</sup> The statements in these periods are taken from Willan's Reports on the Diseases in London.

<sup>2</sup> From Heberden's Observations on the Increase and Decrease of different Diseases.

<sup>3</sup> From Beddoes Hygeia, and Essay on the Causes of Consumption.

<sup>4</sup> Abortive and still-born, which having been specified in this instance, are deducted, as they always ought to be. Whether this necessary deduction has been made in the other instances is not known, but the omission cannot materially affect the general result.

TABLE VI.—PART II.

Bills of Mortality.		Deaths from Consumption.	Annual Average.	Total Mortality.	Proportional Mortality from Consumption.
<sup>1</sup> Holycross, } in } Shropshire, }	10 years, 1750 — 1759,	47	4.7	290	1 to 6
	10 years, 1760 — 1769,	101	10	365	1 to 3.
	10 years, 1770 — 1779,			311	1 to 5
	<sup>2</sup> Chester, . . 2 years, 1772 — 1773,	135	67	731	1 to 5
<sup>3</sup> Shrewsbury, 10 years, . . . . .					1 to 4
<sup>4</sup> Bristol, . . . . .		683		1654	1 to 2
<sup>5</sup> Bristol, . . 7 years, 1790 — 1796,		683	97	1511	1 to 2
<sup>6</sup> London, . . 2 years, 1795 — 1796,		77	38	216	1 to 3
<sup>7</sup> Plymouth, . 7 years, 1799 — 1805,		75	10.7	321	1 to 4
<sup>8</sup> Ackworth, } in } Yorkshire, }	10 years, 1747 — 1756,	23	2.3	107	1 to 4
	10 years, 1757 — 1766,	38	3.8	156	1 to 4
<sup>9</sup> Warrington, 1 year, . . . 1773,		96		1288	1 to 3

## NOTES ON TABLE IV.—PART II.

- <sup>1</sup> This instance of Holycross is stated in the seventh Essay of Hygeia, as a strong proof of the increase of consumption. No doubt it is so; but by an error in the figures the increase is there considerably overrated.—See Phil. Trans. vols. 52 and 61.
- <sup>2</sup> The parish of Holycross contains in it a village, which is part of the suburbs of Shrewsbury. It is six miles in circumference, half of which lies along the banks of the Severn. The register of this parish was kept, during thirty years (1750 to 1780), with singular care and accuracy, by the Rev. Mr. Gorsuch, the vicar. No strangers happening to die in this parish, or persons brought in to be buried, were inserted in this private register; nor any of the fixed inhabitants omitted, though carried out to be buried. The inhabitants, consisting chiefly of labouring people, had amounted, with very little variation, to about 1050, during the twenty years, of which the first ten preceded the commencement of this register. Emigration corresponded to the increase of the births above the burials, which were as 15 to 13. In 1800 the population is stated to have been 1200.
- <sup>3</sup> Haygarth, Phil. Trans. vol. 64, 65; Hygeia, 7, 58. "Strict injunctions were given," says Dr. Haygarth, "that no disorder, unless attended with cough, should be called consumption."
- <sup>4</sup> Hygeia, 7, 6. Essay on Consumption.
- <sup>5</sup> Hygeia, 7, 6.
- <sup>6</sup> Essay on the Causes of Consumption, p. 4. This is supposed to be a corrected statement of the preceding.
- <sup>7</sup> Willan's Reports on the Diseases in London, p. 84.
- <sup>8</sup> Table I.
- <sup>9</sup> Price on Reversionary Payments, vol. ii. p. 375.
- <sup>10</sup> Phil. Trans. vol. 64.
- <sup>11</sup> The actual number of deaths in this year was 473; but of these 211 were occasioned by epidemical small-pox. In reducing the number to 288, it still remains above the average of the three preceding years.

From the first part of the preceding table it appears, that the absolute and relative mortality from consumption has been regularly increasing during the last century ; though it seems to have been considerably less in its relative proportion at the commencement of this period, than it had been fifty years before. Dr. Heberden has stated this augmentation, in a gross way, by the following figures, the total mortality in each instance being 21,000.

Deaths from Consumption.

At the beginning of the 18th century, 3000 = 1 to 7.

At the middle of the 18th century, . 4000 = 1 to 5. 25.

At the end of the 18th century, . 5000 = 1 to 4. 2.

If he is correct in his statement of the proportion in the first period, there must have been a great decrease in deaths from consumption in the first years of the century, since the relation in the last five years of the preceding century is, as stated in the table. 1 to 5. 8. On the contrary, in stating the proportion in the third period as 1 to 4. 2, he is not supported by the average of the last ten years of the

century, which makes it as 1 to 3. 8. As there is much reason to believe that the general mortality has for some time been on the decrease, relatively to the increasing population of the country, it admits of a question, whether the number of deaths from consumption, which, relatively to the deaths from all other causes, is without doubt very considerably augmented, is in reality increased, relatively to the population of the country. In other words, does a larger proportion of the inhabitants of this island fall a victim to this disease at present, than did at the close of the seventeenth century\*?

\* Many arguments might be mentioned, which would a priori have rendered probable the extension of this disease. Of this sort is the argument drawn from hereditary disposition, which, if admitted, must be allowed to have considerable influence. In an opulent and flourishing country, where population is on the increase, many weakly children will be reared, who, in a less improved state of society, must have perished in early infancy; and consequently there will be a larger proportion of adults obnoxious to a disease of this description. In such a country a much larger proportion of the people will be occupied in sedentary employments, in manufactories subservient to the arts of luxury and refinement. The altera-



That consumption has for some time been, and still is, an increasing disease in this island, is presumed from the increased relation of deaths from this disease to the whole mortality at the present period, contrasted with the relation it bore at different periods in the last century and half, as exhibited in the bills of mortality. Assuming the variation in this relation to be a just measure of the absolute increase and decrease of the disease, it will appear from an inspection of the first part of the sixth table, that at the close of the seventeenth century the consumptive mortality was less than it had been in the middle of that century, by nearly one-sixth part; that in the middle of the eighteenth century it had somewhat increased, but was still considerably less than it had been an hundred years before; but that at the close of this century its increase had been so great, as not only to equal the mortality in the

tion in diet and clothing affords arguments of an equivocal nature. How long this may be the case in the latter instance is perhaps not doubtful. The female costume of Greece is indeed elegant, but our climate is not Attican.

first period, but to exceed it by nearly one-fifth. The relations of the mortality at these four periods, or half centuries, in the succession above stated, correspond to the following numbers, 48, 58, 54, 38.

To the assumption of this increase of the relative mortality, as a measure of the real increase of consumptive mortality, two objections occur. First, it may be said, that the increase of consumption within the bills of mortality is no proof of its general increase in the kingdom at large, since this may be attributed to the operation of local causes; and, secondly, it may be stated, that an increase in the proportion of mortality from one disease to the whole mortality, is no proof of its absolute increase; since the apparent augmentation in the former may have arisen from a real reduction of the latter.

Each of these objections is entitled to attention.

To the first it may be replied, that al-

though the ratios of consumptive mortality in a crowded metropolis may not at any period be a measure of relation justly applicable to the kingdom at large, yet that those ratios may justly be compared with each other at different periods ; and, that from the comparison may be formed a scale of variation, which may be justly applied as a measure of increase and decrease to the whole kingdom, unless any material change can be supposed to have taken place in the local circumstances of the metropolis within the period. It is not, however, obvious that any such change has taken place in regard to London. The improvement of the city, after the great fire in 1666, certainly tended greatly to the increase of its salubrity, and might, perhaps, contribute to the relative decrease of consumptive mortality which is observed after that period, although its known influence in putting a stop to the prevalence of plague, and in mitigating the ravages of other contagious distempers, by which the sum of the general mortality must have been diminished, would rather

lead to a different conclusion. But what local change of circumstances has occurred in London in the last thirty years, to which, with any plausibility, can be attributed the great increase of consumptive mortality within that period? Great as the addition to its population has been, equally great has been the extension of its buildings; and there is little reason to believe that the inhabitants are now more crowded than they were formerly. On the contrary, the local improvement of the metropolis is believed, by the most competent judges, to have contributed largely to its general salubrity; and it seems highly improbable that to the same local circumstances should be owing an increase of mortality from one disease, and a diminution from all others. Such a consequence might indeed seem to be involved in the rapid increase of the population of the metropolis, because the emigration from the country, by which this increase is made, takes place chiefly at that period of life, which is deemed most liable to the invasion of phthisical disease. This cir-

cumstance may perhaps account for the greater proportion of phthisical mortality in London, compared with the country, and other towns of less magnitude; but cannot be allowed to have any influence on the relations subsisting in London at different periods, because the metropolis must at all times have drawn its recruits from the country under similar circumstances,

But the relative increase of consumptive mortality of late years rests not on the sole evidence of the London bills of mortality. It is confirmed by two instances in the second part of the sixth table, the cases of Holycross and Ackworth. In the instance of Holycross the increase is so great and so rapid, that it is difficult to believe that some mistake has not been committed in the numbers, although the unusual accuracy with which the record of that parish was kept by Mr. Gorsuch during thirty years, is adverse to such a supposition. If it be correct, it proves

that the mortality from consumption was nearly doubled in the space of ten years in a small parish, in which, during that period, very little variation occurred, either in the population, or in the general mortality. In the other instance of Ackworth, the increase, in the space of ten years, amounted to one-eighth; an increase of a very serious nature, if the short space of time included in the observation be considered, as well as the period itself, which was from 1757 to 1767, at which time no great increase had begun to take place in London. The period of vast increase at Holycross was from 1760 to 1770, from which latter year may be dated the augmentation in the London bills.

The second objection which, it was observed might be stated against the presumption of absolute increase of consumptive mortality from its relative increase at different periods, is grounded on the difficulty of ascertaining whether this increase may not be apparent only, and

arising from a decrease in the general mortality.

If, for example, the inhabitants of this country had, in the year 1700, been six millions, the proportion of mortality one in forty, and the proportion of consumptive mortality one to six, the total deaths would have been 150,000, and those from the disease under consideration 25,000. If in the year 1800 the inhabitants had been the same in number, and the deaths from consumption had been known to have increased relatively one-third, or to be in the ratio of one to four, still might there have been no increase in the absolute fatality of consumption; but a reduction of the general mortality might have taken place in the same proportion, so as to have become as one to sixty; in which case the total mortality would be 100,000, and the consumptive mortality still 25,000 \*. This

\* These, and subsequent statements of a similar nature, may be more readily comprehended by referring to the following calculations, founded on the assumed relations of mortality:—

objection is therefore not without weight, and shews that, in order to establish a relative increase of mortality from any disease to be a just measure of its absolute augmentation, we must ascertain the proportion of deaths to the inhabitants of the country at the particular periods between which a comparison is instituted. As this proportion is not, and cannot be ascertained with precision, we must be satisfied with such an approximation to the truth as can be derived from the imperfect evidence found in those authors, who have treated of that branch of poli-

Population.	Proportion of Mortality to Population.	Total Mortality.	Proportion of the Consumptive to the total Mortality.	Deaths from Consumption.
6,000,000	÷ 32 =	187,500	÷ 6 =	31,250
			÷ 4 =	46,875
————	÷ 36 =	166,666	÷ 6 =	27,777
			÷ 4 =	41,666
————	÷ 40 =	150,000	÷ 6 =	25,000
			÷ 4 =	37,500
————	÷ 54 =	111,111	÷ 6 =	18,518
			÷ 4 =	27,777
————	÷ 60 =	100,000	÷ 6 =	16,666
			÷ 4 =	25,000
11,000,000	÷ 40 =	275,000	÷ 8 =	55,000



tical economy, with which this question is connected \*.

\* Writers on political economy have in vain endeavoured to ascertain with precision the relations of mortality to population in the same country at different periods. The collected information on this subject, recently obtained by the returns to Parliament in answer to the questions proposed in the Population Act, has also proved insufficient to establish with any degree of accuracy the subsisting mortality in this kingdom at the present period; much less to contrast it with the relations which have prevailed at antecedent periods. If the actual return of burials from the abstract of the parochial registers were complete, the annual average of deaths during the last six years of the past century would be found to be, to the population of the kingdom, as one to forty-seven. But these returns are confessedly incomplete from various causes, among which may be mentioned, a total absence of returns from some parishes; known, and reasonably presumed, omissions in those registers from which returns have been made; and a deficiency of any return of burials occurring in places of interment, belonging to different societies of dissenters from the established church. Of the additions, which ought to be made to the sum of recorded burials on account of these deficiencies, there are no data on which a correct estimate can be founded.

This difficulty subsisting in the ascertainment of the absolute number of deaths, Mr. Malthus has presumed that the proportion of mortality to the population in this island, at the present time, may be stated as one to forty: the lowest proportion of deaths, he observes, that can well

Presuming, for the present, that in the year 1700 the mortality in England, in

be supposed in the circumstances of the country, and, if true, indicating an astonishing superiority in healthiness over the generality of other states. In adopting the ratio thus assumed by Mr. Malthus upon grounds confessedly imperfect, less scruple may be entertained from the probability that, if it be erroneous, it deviates from the truth by supposing the proportion of deaths to be less than it really is; and consequently, by employing it as a measure of comparison, there is no danger of drawing exaggerated inferences in relation to the absolute mortality arising from particular diseases. If, however, the assumption be just, it confirms the persuasion, prevailing among medical inquirers, of a progressive decrease of the fatality of disease in general; a decrease, which may be attributed in great measure to improved habits of the people in respect to cleanliness, to the adoption of measures during some years past to prevent the diffusion of contagious febrile diseases, and in some small degree, it may be hoped, to the gradual improvement of the healing art.

The influence which preventive medicine may have on the population of a country, is at present strongly illustrated by the effects of the introduction of vaccine inoculation. It cannot be doubted that this practice has, since its introduction, considerably diminished the annual mortality. It must not however be supposed that this diminution is in the same ratio with the decrease of deaths from small pox, since that were to presume that the vaccinated children were exempted from death by the agency of any other disease. Mr. Malthus has stated his belief,

proportion to its inhabitants, was one to thirty-six; and that the relative increase

that, if the introduction of the cow-pock should effect the extirpation of the small-pox, a perceptible difference will be found in the increase of mortality from some other diseases, supposing the proportion of marriages to remain undiminished. The statement of this belief, which is unavoidable, seems to have been strangely misconstrued into an objection to the practice of vaccination. The principles of that author, and the reasonings founded upon them, forbid such an inference, even if it stood not in contradiction to the direct avowal of his inclination to believe, "that the gradual light which may be expected on the interesting topic of human inquiry in which he has engaged, will teach us to derive from the extinction of a mortal disorder a real blessing, a real improvement in the health and happiness of mankind."

The political economist, who adopts the principles of Mr. Malthus, could he direct at will the population of his country, would adjust the balance between the supply of inhabitants and the means of subsistence, by the operation of the preventive rather than the positive checks to superabundant population. It would consequently be his aim to prevent premature mortality, and his endeavour to preserve, by every means, the lives of those in existence, whether as already contributing by their exertions to the common support, or as advancing to the period when they would become qualified to sustain their share of active employment. He would estimate the death of every individual prematurely cut off, as a loss to the state, in the

of consumptive mortality has, in the course of the century, amounted to one-

proportion in which, according to his age, the expense of his maintenance had already exceeded the amount of his productive labour. Such an economist would be a most strenuous advocate for the application and extension of preventive medicine. He would deprive small-pox of its victims by encouraging vaccination: he would oppose the ravages of contagious fevers, by instituting houses of reception: and he would check the influence of disease in general by promoting habits of cleanliness and sobriety. If, by this preservation of life, his population increased beyond his means of subsistence, he would employ his preventive check to obviate a redundancy, and by diminishing the number of marriages, he would adjust the supply of births to the real wants of his society. That by so doing he would greatly increase the productive labour, and augment the power of his people, in proportion to their numbers, will not be denied; but that he would increase the sum of happiness in his community may, perhaps, be doubted. Would he not necessarily condemn a large proportion of his people to celibacy, and upon the remainder accumulate the difficulties, the cares, and the anxieties, inevitably attendant on the support and education of numerous families?

The effects which have now been hypothetically attributed to the interference of the politician, will, in the present state of things, be produced by the operation of natural causes. A general decrease of deaths, whether it be effected by entirely closing one of the great sluices, or

third, or is become as four to six, it follows that there must have been an absolute

by narrowing all the channels, of mortality, must be productive of a reduction in the number of marriages, and, consequently, of births. Whether such consequences would be in themselves salutary, or conducive to the augmentation of the sum of human happiness, is an inquiry beset with too many difficulties, and involving too many abstruse considerations, to be entered upon here. This, at least, we can perceive, that the provision for the multiplication of life prevails over the provision for its preservation; and hence we may safely conclude, that the ultimate tendency of this is beneficial. It is sufficient for us to know, that the preservation of life is a duty incumbent on man; that the means of effecting it, to a certain extent, are placed within his reach; and that experience has shewn that those means have not been ineffectually employed.

The decrease of mortality, which has been presumed, and partly proved, to have taken place of late years in this kingdom, is probably owing, in great measure, to the preservation of infant life, which the introduction of vaccination has a tendency to augment in a much greater ratio, than any of the various causes, by the combination of which it has hitherto been effected. But the diminution of mortality in general, and of early mortality in particular, inevitably tends to increase celibacy. Augmenting the probability of a large family, gives force to the influence of the preventive check to marriage. This probability has been increased in the higher and middle ranks of life since the introduction of variolous inocula-

increase to a certain extent, unless in the same period the proportion of mortality to population has become as 1 to 54. But this supposition is too extravagant to require refutation. It is sufficient to observe, that an uncommon degree of healthiness is attributed to this island, when it is admitted, that the mortality at present may perhaps amount only to 1 in 40. Admitting, however, with a late author, that the last-mentioned proportion is just, let us inquire what the proportion must have been in the year 1700, to account for the difference of the relative mortality of consumption, upon the supposition of there being no absolute in-

tion, and of various improvements in the treatment of children in early infancy. On these classes of society it may be presumed to have exerted its influence insensibly, in conjunction with other and more powerful causes. If the fatality of small-pox should be annihilated by the universality of vaccination, the probability of more numerous families will extend also to the lower orders; and on them it must be expected to have a similar effect. But its influence here will be counteracted by the happy want of foresight in some, and, in others, by the consideration of the encouragements to marriage, which it is the tendency of almost all our charitable institutions to propose.

crease. In that case we shall be constrained to state the general mortality in 1700 to have been 1 in 27 nearly, which implies a degree of unhealthiness inconsistent with the known condition of the country at that period. It is obvious, that no such proportion of deaths, as has been stated in these two instances, could have happened without such a corresponding augmentation in the population of the country, as is known not to have occurred, and is altogether extravagant to suppose.

From the foregoing considerations it seems to be clearly established, that the apprehension of the increase of consumption is not vain and unfounded. The degree of that increase will probably be estimated differently by different calculators; but will not, by any mode of calculation, be shown to be inconsiderable. Without pretending to offer the following comparative statements as conclusive, I venture to propose them as probable approximations to the truth.

Suppose the inhabitants of England to have been, at the commencement of the seventeenth century, six millions, the annual mortality one in thirty-six, and the consumptive to the general mortality one to six. In this case, the total number of deaths from consumption must have been 27,777. Suppose at the close of the century the inhabitants to be the same in number, the consumptive mortality to have increased to the proportion of one to four, and the annual mortality to have sunk to one in forty. In this case it is evident, that the absolute increase of deaths from consumption will be less than its apparent relative increase of one third, in the same proportion as the total mortality has decreased, which is by one ninth; in other words, the absolute number of deaths from consumption in this case will be 37,500, instead of 41,666, the number to which they would have amounted if the proportion of general mortality had remained unchanged; and the absolute increase will be equal only to somewhat more than one-fourth.



If it should be thought that sufficient difference has not been allowed for the increased healthiness of the kingdom at the end of the century, under the known circumstances of its increased population, let us suppose, that in the year 1700 the annual mortality was so great as one in thirty-two, in which case the consumptive mortality would have been equal to 31,250; and consequently the increase in the century would have amounted only to the difference between that number and 37,500, that is to 6250; and the absolute increase, instead of being one-third, would have been one-sixth. Yet if this should be deemed a juster measure of increase for the whole century than the preceding, still it cannot be considered as a just measure of the increase for the last thirty years; during which period, whether we refer to London, or to the country, we find reason to believe, that the consumptive mortality has increased in a much more rapid ratio than it had in the preceding part of the century.

In these hypothetical statements the population has been supposed to be stationary, because no alteration in it does in any manner affect the argument; but when the increase of consumptive mortality is admitted, the augmentation of the population can no longer be disregarded in estimating the magnitude of the evil.

From an examination of the two parts of the sixth table it appears, that during the last half century the proportion of consumptive to general mortality has been as 1 to 4.2. But as the consumptive mortality may be comparatively less in the country than in towns, from which the grounds of the calculation have been chiefly derived, to avoid exaggeration, let the proportion for the kingdom at large be stated to be as 1 to 5. If this be admitted as just, and if it be granted that the annual mortality is to the population as 1 to 40, while it is ascertained that the inhabitants of Great Britain amount to eleven millions, it will be found that the

ANNUAL VICTIMS TO CONSUMPTION IN THIS ISLAND are not less than FIFTY-FIVE THOUSAND PERSONS.

If the period of life, at which these victims perish, be considered, the loss in a political point of view will assume additional importance. The popular notion of consumption, as one of the ministers of fate, is chiefly drawn from its effects in the superior and conspicuous ranks of society, where it more frequently commences its attack at an early and interesting period of life. From the numerous instances of this kind, which real life daily presents to our view, and fiction continually employs to heighten the scenes of imaginary distress, we are led to confine in idea the influence of this disease to an earlier and shorter period of life, than that to which it is in reality extended; and consequently to consider it as peculiarly destructive to those beings, by whom the relations have not yet been formed, which, connecting the individual with the community, combine in

their dissolution the public with the private loss. But if from these scenes of conspicuous woe, we turn to the humble walks of private affliction, in the lower and laborious classes of society, in the great mass and strength of the people, we shall find it prevailing at a more advanced age, at a period at which the preservation of existence, politically considered, is an object of peculiar value. It assails the labourer and the mechanic in the prime of life ; not an insulated, unconnected, individual, but the father of a family, which he leaves helpless and indigent, a burden on the public to maintain. Nor is this protracted influence less extended to the females in the same rank of life. The sufferings they frequently sustain in becoming the mothers of a numerous offspring, too frequently call into action the latent seeds of the disease ; and from the circumstance which renders the continuance of their life of increased importance, is traced the source of their untimely death.

From statements of Dr. Haygarth and Dr. Aikin it appears, that one half of those who died of consumption in two years at Chester, had passed their thirtieth year; and at Warrington, three eighths had passed their forty-fifth year. At our dispensary, the number of those who have died beyond thirty exceeds the number of those who died before the attainment of that age, in the proportion of two to one\*. The period between thirty and forty seems to be most fatal, the deaths within

\* Deaths from Consumption,

		At Chester.		At Plymouth.	
Under 5 years of age		14	} 67	..	3
Between 5 years and 10		4		..	2
— 10 — 15		7		..	5
— 15 — 20		15		..	6
— 20 — 30		27	} 63	..	10
— 30 — 40		24		..	26—25
— 40 — 50		22		..	13
— 50 — 60		16		..	10
Above 60		6			
Total		135			75

				At Warrington.	
Under 14		..	..	24	} 96
Between 14	45	..	..	36	
Above 45		..	..	36	

that term being equal to all those occurring before thirty, and rather greater than those happening after forty.

The importance of determining the interesting question, whether consumption be an increasing disease, may justify the length to which the pursuit of the inquiry has been extended. If the increase of consumptive complaints be established as an incontrovertible fact, if this increase has already proceeded to the extent which has been rendered probable, and is still advancing with accelerating rapidity, the promulgation of it must surely add energy to the warning voice, which has loudly demanded, without having sufficiently awakened, the attention of the guardians of the rising generation to the danger which threatens it. If it be established as a fact, let us not vainly hope to find an antidote to its ravages in the hidden stores of nature ; but let us rather strenuously seek to ascertain the causes of its extended influence ; and endeavour, by all the arts of prevention, to obviate

the attack of a foe, which prudence may assist us to avert, but no prowess will enable us to overcome\*.

\* It is no part of the design of this tract to enter into the investigation of the causes here alluded to. Its aim is simply to excite such an inquiry by others, possessing a wider field of observation, and to be a preliminary step towards it. The inquiry, indeed, will be unnecessary, if the preliminary fact be not established; and, if it be not, it must be owing either to a fallacy in the sources whence the premises are drawn, to errors in conducting the calculations, or to inconclusive reasonings from them. But if from the above statements, as they now are, or as they may hereafter stand corrected by just criticism, the conclusion be verified, the future inquirer will at least not be stopped *in limine*, as the author of a late inquiry into the changes in the climate of Great Britain, by a denial that any change had occurred.

In speaking of the chance of curing consumption, it is far from my intention to depreciate the merits, or abate the zeal of those, by whom new methods of trial are recommended; but only to state the smallness of the chance, for the purpose of quickening attention to the necessity of early recourse to prevention. In attempts to cure the disease, when formed, we generally have the earnestly concurrent assistance of the patient and his friends. In applying the means of prevention, have we not, too often, the concurrent counteragency of both these parties? The alliance, which at first might have been decisive, is withheld, until it is at best fruitless and unavailing.

Having thus deduced from the evidence contained in the sixth table, the extension of phthisical disease in general, our attention is recalled to the more immediate object of inquiry; its relative influence in this place, compared with other places mentioned in the table, especially those in the second part.

If the average of consumptive mortality at Plymouth be compared with the general average deduced from the same source in all the places cited in the second part of the table, collectively taken, it will be found to differ only in the small proportion of one seven-teenth, the relation of the former to the latter being as 4.28 to 4. If London and Bristol be excluded, it will somewhat exceed the average of the remaining places, the relation in that case being as 4.28 to 4.36. But that the difference in the latter instance would have been reversed, and in the former considerably augmented, if the comparisons had been instituted from data derived from identical



periods, is a conclusion warranted by the preceding remarks in proof of the progressive increase of the malady under consideration. For it cannot have escaped observation, that, while the average of mortality from the other places is drawn from documents which do not extend beyond the year 1773, and are included within that and the year 1747, the average of Plymouth is derived from a period so much more recent, that the far greater part of it extends into the present century. But if the average of Plymouth be contrasted with those averages, which are deduced from periods nearly correspondent in time, of which we have instances only in Bristol and London, it will be found that the phthisical mortality at Plymouth has of late years been nearly one fourth less than in London\*, and less by nearly one half than in Bristol\*.

In the unsettled state in which Europe has for some time been, and in which she

\* Tab. VI. P. II.

is probably destined long to continue; while in some countries the genial influence of climate is denied by open hostility, and in others neutrality is no longer permitted to afford a sanctuary even to the votaries of health; it has become an object of increased importance to determine, what places in our own island are best adapted to the residence of those, who are assailed by the "*giant malady of the country*."

The mildness of the winter season in the south-west of England has of late years induced consumptive invalids to seek refuge in Devon and Cornwall. It would certainly be an object of curiosity and of utility to ascertain the frequency and mortality of indigenous consumption in these counties, relatively to other districts in the eastern, northern, and mid-land parts of the island. Unfortunately for this inquiry, most of the calculations we possess, are derived from registers kept in large towns, and consequently liable to be influenced by various local

causes. On account of this influence it has been suggested, that the number of cases of consumption occurring at Plymouth may not afford a just criterion for estimating the relative frequency of the disease in the western part of the island; because the occupations and habits of many of the inhabitants of this town are conceived to be peculiarly favourable to the production of the disorder\*. Various employments in a sea-port necessarily expose a large proportion of the labouring class to the severities and vicissitudes of weather; and under such circumstances the inducement to a more free use of spirituous liquors, will be aided by a greater facility of obtaining them. Of this argument it may be deemed no trifling confirmation, that the proportion of males to females, whose deaths from consumption

\* This objection was suggested by a physician of this place, who, in the course of his extensive practice, has had frequent opportunities of observing the greater prevalence of consumptive complaints in the little towns and villages on the seaside near Plymouth, than in the country at large. This he ascribes to the combined operation of the causes assigned.

are recorded in the first table, exceeds three to two; a proportion the reverse of that which might have been expected, if the greater exposure of men in sea-faring occupations had not been adverted to\*.

It may also be objected to the application of a proportion derived from the phthisical mortality of a Dispensary only, to the district containing that institution; that consumption may be presumed to be more prevalent among that class which applies to such charities for relief, than among the middle and higher ranks; and consequently, that the relative mortality will be greater in that portion, than in the aggregate of the inhabitants of the district. Consonantly to this supposition

\* This presumption of the greater liability of the female sex in general is not, it must be confessed, warranted by the only other instance in point, which has occurred to me. In this the proportion of males exceeds that of females, although in a far less degree than in the instance above-mentioned. At Ackworth, in Yorkshire, there died of consumption, from 1747 to 1767, thirty-three males and twenty-eight females, which is in the proportion of 8.25 to 7.

it will be observed in the sixth table, that the proportionate mortality, stated from Dr. Willan's general practice, exceeds that deduced from the bills of mortality; which could not have happened, if Dr. Willan's statement had not been materially influenced by the description of his patients, a large proportion of whom, notwithstanding the known extent of his private practice, must have been derived from the Carey-street Dispensary.

In considering the effect of these objections in the instances cited in the table, we shall find, that the latter alone, and that partially, applies to Dr. Willan's statement; and that the former is applicable to Bristol and London, (where the combined operation of exposure and intemperance must assuredly be experienced in full as great a degree as at Plymouth) and not to Shrewsbury and Chester. If therefore, the mortality at Plymouth be contrasted with that at Chester or Shrewsbury, an allowance must be made for the local reasons assigned in each of the objec-

tions; but if the comparison be made with Bristol or London, such a correction only is necessary as may be warranted by the second objection. Upon the whole it appears not improbable, that more accurate and comprehensive statements might confirm the opinion entertained of the comparatively favourable influence of the climate of the west of England on consumptive complaints.

One observation more respecting this disease shall suffice. In the first table, the whole number of cases of phthisis is stated to be 198, and of deaths 75; and accordingly in the fourth table, the proportion of mortality is said to be as 1 in 2.61. But from this statement it must not be inferred, that the recoveries have been in this proportion. The practice at our institution lays not a claim to such success. This disagreement will be explained by recollecting, that in the course of seven years the same persons may have been admitted at different times, labouring under the same disease, and at each

time of admission may have been considered as distinct persons. Some also having been relieved, and discharged for the purpose of going into the country for change of air, may have there died unrecorded. Others, wearied with a long attendance, desire to be discharged, and resigning themselves to their fate, sink at last unnoticed into the grave. What allowances are to be made on these accounts cannot be easily estimated. In early stages of the complaint some benefit is doubtless derived from preventive medicine, in removing the disease, or in deferring the period of its fatal attack; and certainly some rare instances do, from time to time, occur of recoveries under circumstances apparently most unpromising. By the recollection of these our hopes are animated, and our feelings reconciled to the task of attending the victims of this disease, the most painful office of a painful profession.

The disease, which from its importance claims the next attention, is FEVER, the

prevalence of which in this town is, as has been already hinted, less extensive than might have been expected from the consideration of its populousness, its liability during war to an excessive increase of its inhabitants, and to its exposure to contagion from its intercourse with fleets and armies.

The proportion of typhus to other diseases at our Dispensary, on an average of seven years, is as 1 to 20.2. At the Dispensary in Liverpool, we find from the tables given by Dr. Currie\*, that the proportion of typhus to other diseases was, on an average of seventeen years, as 1 to 4.5 nearly. In that period the number of general cases admitted at the Dispensary amounted to 213,305, of which 48,367 were cases of typhus. In the space of seven years the number of general cases admitted at our Dispensary has been 4409, of which 218 have been cases of typhus.

\* Currie's Medical Reports, &c. 230, 2d. edit.



But before a comparison can be instituted on these data, some circumstances must be taken into consideration, which may materially influence the result. In the first place, the disproportion will be made much more considerable by deducting from the general cases, admitted at Liverpool, one sixth part\*, as the probable proportion of surgical cases, which are not admitted in these tables. But, on the other hand, it is probable, that this difference would be counteracted by the addition of all the medical cases admitted in the same period into the infirmary at Liverpool. And as cases of fever are not admitted into this infirmary, and as Plymouth has no such institution, it is obvious that this addition must be made, before we can institute a fair comparison between the proportions of fever to other diseases, to which the same class of people in the respective towns is liable; the

\* In assuming the surgical cases to be one sixth of the whole, the proportion is adopted, which actually subsists in a return for September, 1790, stated in page 225 of the work above cited.

care of the general diseases being in the one instance divided between two establishments, and the care of the particular disease being restricted to one of them, while in the other instance, one establishment includes the admission of the particular as well as the general diseases. This necessary correction cannot be made, owing to the number of admissions into the Liverpool Infirmary being unknown. A correction is also required, on the other hand, in the Plymouth statement, since the proportion ought to be increased by deducting from the general cases all those which have occurred in persons not residing within the town; as it is obvious from the nature of the Institution, that no cases of fever occurring in persons of this description can have been admitted. Still, however, after making these contrary allowances, there will probably be no great error in presuming the prevalence of fever to be more extensive among the lower class of inhabitants of Liverpool, than it is among those of the same de-

scription in Plymouth, in the proportion of four to one.

This amazing difference must, however, without hesitation, be ascribed in a much greater degree, to causes rendering Liverpool peculiarly obnoxious to the influence of fever, than to causes operating to render Plymouth peculiarly unobnoxious to similar influence. Of this, little doubt can be entertained, when it is known, that of the inhabitants of Liverpool "seven thousand live in cellars under ground, and nearly nine thousand in back houses, which in general have an imperfect ventilation, especially in the new streets on the south side of the town, where a pernicious practice has been lately introduced of building houses to be let to labourers, in small confined courts, which have a communication with the street by a narrow aperture, but no passage for the air through them. Among the inhabitants of these cellars

and back houses typhus is constantly present\*.”

The proportion of fever cases at Plymouth approaches nearer to that which appears to obtain in London. From an average of Dr. Willan's practice, during four years, it appears that the cases of fever were to the general cases as 1 to 16, the total number of the former being 11,484, of the latter 731†. Here, however, it must be observed, that Dr. Willan's cases included not only those admitted at the Carey-street Dispensary, but also those occurring in his own very extensive private practice among the middle and higher classes of society; and as the

\* Currie's Reports, &c. 222, 2d. edit.

† See Reports on the Diseases in London.—It is here necessary to observe, that, in estimating the number of fever cases, in Dr. Willan's Monthly Reports, I include not only what he styles contagious fever, but his synochus and slow fever, because I apprehend the term typhus, in the other instances, to have been employed in the extensive sense in which it was applied by Cullen, and, consequently, to have embraced all those cases.

prevalence of fever in those classes is comparatively very inconsiderable, we are probably entitled to deduct such a number from the general cases, as will render the proportion of fever to the remainder as 1 to 13, or even 12. It must, at the same time, be remembered, that a contrary correction must be made, as in the case of Liverpool, on account of the London hospitals, from which fever is also excluded.

In Dr. Clarke's relation of the recent proceedings at Newcastle, for the establishment of a house of recovery\*, there are many facts relative to the prevalence of fever, in that and some other towns; but there are not sufficient data for instituting a comparison, even on the grounds assumed in the preceding instances. In one place†, he speaks of the

\* Collection of Papers intended to promote an Institution for the Cure and Prevention of infectious Fevers in Newcastle, &c. By John Clarke, M. D.

† Part I. p. 19, note.

number of cases of fever in one year having amounted to 425 ; in another\*, he gives the number of cases admitted at the dispensary in four successive years, the average of which is 156. But as he does not state the total number of cases admitted in the same period, the relation of one to the other cannot be obtained. We may, however, arrive at a conclusion by another process, namely, by finding the proportion of fever cases to the number of inhabitants. The number of fever cases admitted at the Newcastle Dispensary, assuming 156 as the average, is to the population of that town, estimated at 36,000, as 1 to 231. And if the number of general cases admitted at the Newcastle Dispensary be to the inhabitants at large in the same relation as the corresponding number is at Plymouth, namely, as 1 to 24, then it will follow, that the proportion of cases of fever, at the former place, is as 1 to 10.

\* Part I. p. 56.

Upon the whole, from these premises, which must be allowed to be but imperfect, we shall perhaps approximate the truth in supposing the relative occurrence of fever to other disorders, among the lower class of inhabitants, to be in Liverpool as 1 to 5; in Newcastle, as 1 to 10; in London, as 1 to 13; and in Plymouth, as 1 to 18. This calculation will appear less objectionable, when it is recollected, that the best evidence in its support subsists in the two instances, which form the extremes.

Few remarks remain to be made on the other diseases included in the first table.

The decrease of INTERMITTENT FEVER in this district is sufficiently obvious, by contrasting its rare appearance at present with the frequent mention of it in the writings of Dr. Huxham. Yet, from an observation of that author\*, connected

\* *Ex quo sanè tam udas habuimus tempestates, febres intermittentes omnigenæ per has regiones grassatæ sunt*

with subsequent experience, it should seem that the prevalence of intermittents in this place, at the period when he wrote, was owing to accidental circumstances; and that the present, as well as previous, exemption from this disorder is to be ascribed to local and original causes, and not to the operation of those general causes, connected with the agricultural improvement of the country, by which its influence in this island has been confined to very narrow limits.

Dr. Heberden remarks that there is scarcely any fact to be collected from the bills of mortality more worthy of attention than the gradual decline of DYSENTERY. In the seventeenth century, the number of deaths under this head appears

*maximè, etiam in hoc oppido et per viciniam; cum tamen annis ab hinc viginti veras intermittentes rarissimè viderim. Imo bene memini milites plurimos, emeritos, ad arcem nostram olim transvectos ab oris Icenis et Portu magno, pertinaci admodum quartanâ tantùm non confectos penitus, qui tamen hic, a sola benignitate cœli, convalescere protinus.*  
—Huxham de Aere, An. 1735, p. 117.



to have been never less than one thousand, and sometimes to have exceeded four thousand. In the eighteenth century, the decline was constant, regular, and rapid; the average number of cases, in the first ten years, amounting to one thousand and seventy, and in the last ten years only to twenty. Yet, from the year 1733, colic has been included under the same head with dysentery. Our tables confirm the infrequency of these diseases. Dysentery is almost unknown; and the decrease of COLIC in this town, during the last thirty or forty years, has been, I have reason to think, very remarkable. Its relative occurrence is as 1 to 133, and its proportional mortality as 1 to 321. Of dysentery no fatal case has occurred.

The increase of APOPLEXY and PALSY, Dr. Heberden observes, has been gradual and constant. The proportional mortality from these diseases is now more than double what it was a hundred years ago. On the average of the last five years of the last century it appears, from the

bills, to have been as 1 to 50. Our table confirms the observation, as far as relates to the present times, by giving the relative mortality as 1 to 32.

DROPSY is one of the diseases, which appears to be rather on the decline in the southern part of the island. This seems to have been in great measure effected by the operation of the duties imposed on distilled spirits. The proportional mortality from this disease, as deduced from an average of the last three years of the eighteenth century, in the bills, corresponds, very nearly, with that afforded by our table, being in the one instance as 1 to 20.8, in the other, as 1 to 19. The proportion of cases of dropsy to the general cases is as 1 to 36. I am inclined to believe this proportion much less than obtains in the northern part of the island, where the use of whiskey seems still to retain a predominating influence on disease. Has this species of distilled spirits a peculiarly destructive influence? In certain districts of a neighbouring county,

where brandy is supposed to have been drunk with a liberality proportionate to the facility with which it was *once* obtained, I have been assured by a gentleman of accurate observation, whose opportunity of forming an opinion had been long and extensive, that dropsy did not particularly prevail. Yet the free use of spirituous liquors, as a frequent cause of dropsy, rests on evidence too strong to be questioned.

DIABETES, I am led to believe from my inquiries, has been in this neighbourhood a disease of rare occurrence. Our table gives only two instances; and neither of these furnished a well-marked case of the disease. It has been supposed to be more frequent in Scotland than in England; yet in a place where diseases of curiosity are sought after with avidity, and where in diseases little understood relief would be sought from distant parts, twenty cases only occurred to Dr. Cullen, in his long practice. And in the same situation thirteen years afforded only

twelve instances to Dr. Gregory, and twenty years the same number to Dr. Duncan.

At the conclusion of the first table is stated the total number of cases treated at the Dispensary in the first seven years of its existence, together with the TOTAL NUMBER OF FATAL EVENTS arising out of those cases in the same period. If a comparison of these numbers had afforded any presumption of more than usual success, I should silently have participated in the gratification resulting from the reflection, that the liberality of the public had produced a more than wanted share of benefit to the objects of its compassion. But feelings of a different tendency cannot influence me to forbear contrasting the real mortality, as it fairly and simply stands,\* in our Institution, with that which obtains in other establishments of a corresponding, or nearly similar nature. From the great difference in the proportional mortality at different institutions, as stated in the subjoined

table, it will probably be inferred, that no great confidence can be placed in any comparisons on this head, unless the nature and mode of conducting the respective establishments were better known. A source of material difference arises from the admission, or exclusion of surgical cases, the proportion of deaths from the latter being always much smaller than from the former. The mortality also, on several accounts, may be presumed to be greater at dispensaries than in hospitals. In the former, diseases of all descriptions, and at all periods, are admitted; while from the latter, contagious distempers, as fever and small pox, in most instances, and *consumption in many*, are excluded: and how large the proportion of fatality from these sources is, needs not to be recapitulated.

How inferior the chance of success in dispensary to that in hospital practice is, will be obvious to him who reflects on the situation of the diseased poor man in his miserable habitation, often without

necessaries and without attendance, or with these, when supplied, most injudiciously employed, and contrasts it with the condition of the same person transferred to a ward of a British hospital.

It may perhaps be said, that a large portion of cases admitted at a dispensary are of a slighter nature, and such as would not be sent to an hospital; and therefore, that the mortality should be proportionably less. This observation is certainly just, but it is applicable only to those hospitals where out-patients are not received. But it will not escape remark, that in the following table the greatest differences subsist in the reports from dispensaries; and this difference appears to be totally irreconcilable in the first two instances, where a more than common correspondence might have been presumed to obtain. It is equally impossible to reconcile the report of the Carey-street Dispensary, under Dr. Willan's direction, with the result of that

physician's general practice, as well public as private.

That the total proportion of deaths in our dispensary is large, I am still inclined to believe from perceiving the proportion to be unexpectedly large in two or three prevailing disorders. In typhus the loss has been one in six; whereas in the Newcastle Dispensary, and in the Edinburgh Infirmary, the loss is one in fifteen, and in the Whitehaven Dispensary one in twenty. In pneumonia the proportion of deaths with us is also one in six. In the first instance, the difference may partly arise from a diversity in the application of the term typhus. Perhaps many of the cases included in our table under the title febris might have been classed as slighter cases of typhus; and had this been done, the apparent mortality would have been much less. An observation, common to fever and pneumonia, but more decidedly applicable to the latter, is, that admission is too generally deferred to a very late period of the disease. Of

the hundred and thirty eight cases of pneumonia, I suspect there was no opportunity of employing the lancet in a fifth part. The list of deaths is swelled also by the fatal effects of small pox, of the cases of which one half has proved mortal. If delay in applying for assistance be observable in the two last-mentioned diseases, it is still more remarkable in this; but I am far from thinking that a difference in the event would so certainly follow a contrary practice in the latter instance as in the former. But whatever the influence of this cause may be, it is difficult to conceive its operation confined to our institution, unless indeed the novelty of the establishment may be supposed to involve such a consequence.



TABLE VII.

AVERAGE OF DEATHS

AT

SEVERAL INSTITUTIONS.



TABLE VII.

Institutions.	Period of average.	Proportion.
DISPENSARIES.		
1 Carey-street, Westminster . . . . .	15 years	1 in 63.2
2 Surry, Southwark . . . . .	12 years	1 — 35.5
3 Dispensary, not named . . . . .	June to Dec. 1798	1 — 27.5
4 Dr. Willan's practice } London, in private . . . . .		1 — 20.6
5 Dr. Willan's practice } and at the Carey-street Dispensary . . . . .		1 — 18
6 Plymouth, exclusive of cases of surgery . . . . .	7 years	1 — 13.7
INFIRMARIES.		
6 Woolwich, Royal Artillery . . . . .	5 years	1 — 35
7 Exeter, (both in and out patients) . . . . .	60 years	1 — 34
6 Northampton, (new) . . . . .		1 — 31

Institutions.			Period of average.	Proportion.
<sup>6</sup> Leeds, (in-patients)	.	.	1 year	1 — 28
<sup>8</sup> Chester	.	.	18 years	1 — 25
<sup>6</sup> Newcastle, (Dr. Clarke's practice)	.	.	3 years	1 — 23
<sup>6</sup> Glasgow	.	.		1 — 21
<sup>*6</sup> Northampton, (old)	.	.		1 — 19
<sup>6</sup> Worcester	.	.		1 — 19
<sup>6</sup> Newcastle	.	.	2 years	1 — 16
<sup>6</sup> Newcastle, (including cases of surgery)	.	.	1 year	1 — 14.5
<sup>6</sup> Newcastle, (excluding cases of surgery)	.	.	1 year	1 — 14
<sup>6</sup> London hospitals	.	.		1 — 13
<sup>6</sup> Salop	.	.		1 — 11
<sup>9</sup> Hotel Dieu, Paris	.	.	3 years	1 — 5

## NOTES ON TABLE VII.

- 1 From a statement of the charity to March, 1798. The number of patients admitted and discharged is 24,918, of which 394 are deaths. In this statement medical and surgical cases are included, which must be understood to be implied in other instances, when the contrary is not specified.
- 2 From a statement of the charity to March, 1790. The number of patients admitted and discharged, exclusive of midwifery cases, is 40,309, of which 1140 are deaths.
- 3 Cited in Paley's Christian Theology.
- 4 4 Reports on the Diseases in London, pp. 161, 171, 84.
- 5 Table V.
- 6 6 6 6 6 6 6 6 6 6 Clarke's Collection of Papers, intended to promote an Institution for the Cure and Prevention of Fevers in Newcastle. Part I. p. 216, *cf p. sim.*
- \* 6 The proportion of deaths in this infirmary is stated to have been 14 in Clarke's Collection, p. 216, and 19 in two other parts of the same work.
- 7 Annual statement.
- 8 Haygarth. Phil. Trans. vol. 74, p. 71.
- 9 Police of France, p. 83. Price, Vol. 1. p. 290.



PART II.

TABLES

ILLUSTRATIVE

OF THE

INFLUENCE OF THE SEASONS

ON

MORTALITY,

WITH OBSERVATIONS.

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In the following tables, the number affixed to each month is the aggregate amount of the deaths in that month of all the years of the stated period.

In the second division of each table the succession of the months is arranged in relation to the increase of deaths in each of them.

The second number affixed to February denotes the amount of the deaths, upon the supposition of the assignment of thirty-one days to that month.





## TABLE VIII.

\*BLANDFORD.

40 Years—1733 to 1772.

Summer	{ June	{ 190	}	480	}	991	}	2231
	{ July	{ 146						
	{ August	{ 144						
Autumn	{ September	{ 165	}	511	}	5 to 4.	}	
	{ October	{ 172						
	{ November	{ 174						
Winter	{ December	{ 168	}	606	}	1240	}	
	{ January	{ 220						
	{ February	{ 218						
Spring	{ March	{ 223	}	634	}		}	
	{ April	{ 193						
	{ May	{ 218						

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August	144
July	146
September	165
December	168
October	172
November	174
June	190
April	193
May	218
February	218 — 236
January	220
March	223

\* Phil. Trans. The deaths from small-pox, of which a separate account is given, are not included in this table.

## TABLE IX.

\*CHESTER.

2 Years—1772, 1773.

Summer	{	June	}	61	}	138	}	304	}	731												
	{	July	}	38																		
	{	August	}	39																		
Autumn	{	September	}	37	}	166					}	7 to 5.	}	731								
	{	October	}	56																		
	{	November	}	73																		
Winter	{	December	}	82	}	232									}	7 to 5.	}	731				
	{	January	}	69																		
	{	February	}	81																		
Spring	{	March	}	65	}	195													}	427	}	731
	{	April	}	67																		
	{	May	}	63																		

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September	37
July	38
August	39
October	56
June	61
May	63
March	65
April	67
January	69
November	73
February	81 — 87
December	82

\* Phil. Trans., vol. 64, 65

## TABLE X.

\* WARRINGTON.

1 Year.

Summer	{ June	{ 22	54	$\left. \begin{array}{c} 84 \\ 30 \\ 94 \\ 178 \\ 84 \end{array} \right\} \begin{array}{c} 2 \text{ to } 1. \\ 262 \end{array}$
	{ July	{ 16		
	{ August	{ 16		
Autumn	{ September	{ 13	30	
	{ October	{ 11		
	{ November	{ 6		
Winter	{ December	{ 29	94	
	{ January	{ 35		
	{ February	{ 30		
Spring	{ March	{ 35	84	
	{ April	{ 29		
	{ May	{ 20		

---

November	6
October	11
September	13
July	16
August	16
May	20
June	22
April	29
December	29
February	30 — 33
January	35
March	35

\* Phil. Trans. vol. 64.

## TABLE XI.

PLYMPTON - MAURICE, PLYMPTON SAINT  
MARY, PLYMSTOCK, adjoining Country Parishes  
in the County of DEVON.

6 Years—1779—1804.

Summer	{ June	{ 36	} 91	}	211	} 506	
	{ July	{ 23					
	{ August	{ 32					
Autumn	{ September	{ 40	} 120	}	7 to 5.		
	{ October	{ 43					
	{ November	{ 37					
Winter	{ December	{ 39	} 139	}	295		
	{ January	{ 48					
	{ February	{ 52					
Spring	{ March	{ 35	} 156	}			
	{ April	{ 64					
	{ May	{ 57					

---

July	23
August	32
March	35
June	36
November	37
December	39
September	40
October	43
January	48
February	52 — 56
May	57
April	64

## TABLE XII.

ST. ANDREW, CHARLES ; STOKE DAMARELL ;  
EAST STONEHOUSE ; comprising the towns of  
PLYMOUTH, PLYMOUTH-DOCK, and STONE-  
HOUSE.

6 Years—1799—1804.

Summer	{ June	{ 716	} 2059	}	4265	}	9336
	{ July	{ 638					
	{ August	{ 705					
Autumn	{ September	{ 725	} 2206	}	6 to 5.	}	
	{ October	{ 751					
	{ November	{ 730					
Winter	{ December	{ 820	} 2485	}	5071	}	
	{ January	{ 860					
	{ February	{ 805					
Spring	{ March	{ 899	} 2586	}		}	
	{ April	{ 856					
	{ May	{ 831					

---

July	638	
August	705	
June	716	
September	725	
November	730	
October	751	
February	805	— 870
December	820	
May	831	
April	856	
January	860	
March	899	

## TABLE XIII.

\*LONDON.

15 Years—1728, 1743.

Summer	{ June	{ 30197	} 89236	}	191382	}	405951
	{ July	{ 28210					
	{ August	{ 30829					
Autumn	{ September	{ 33375	} 102146	}	214569	}	405951
	{ October	{ 34590					
	{ November	{ 34181					
Winter	{ December	{ 35952	} 109791	}	214569	}	405951
	{ January	{ 37682					
	{ February	{ 36157					
Spring	{ March	{ 37126	} 104778	}	214569	}	405951
	{ April	{ 34242					
	{ May	{ 33410					

---

July	28210
June	30197
August	30829
September	33375
May	33410
November	34181
April	34242
October	34590
December	35952
February	36157 — 39062
March	37126
January	37682

\* Short's Observations, &amp;c.—Heberden, p. 47.

## TABLE XIV.

\*YORK.

7 Years.

Summer	{	June	}	274	}	731	}	1423	}	3175
	{	July	}	220						
	{	August	}	237						
Autumn	{	September	}	225	}	692	}	5 to 4		
	{	October	}	237						
	{	November	}	230						
Winter	{	December	}	292	}	894	}	1752		
	{	January	}	320						
	{	February	}	282						
Spring	{	March	}	316	}	858	}			
	{	April	}	277						
	{	May	}	263						

---

July	220
September	225
November	230
August	237
October	237
May	265
June	274
April	277
February	282 — 306
December	292
March	316
January	320

## TABLE XV.

\* 23 COUNTRY-TOWNS IN ENGLAND.

Many years.

Summer	{ June	{ 13680	} 39509	}	80211	}	180856
	{ July	{ 13034					
	{ August	{ 12795					
Autumn	{ September	{ 12999	} 40702	}	5 to 4.	}	
	{ October	{ 13629					
	{ November	{ 14074					
Winter	{ December	{ 15658	} 48716	}	5 to 4.	}	
	{ January	{ 16932					
	{ February	{ 16126					
Spring	{ March	{ 17641	} 51929	}	100645	}	
	{ April	{ 17670					
	{ May	{ 16618					

---

August	12795
September	12999
July	13034
October	13629
June	13680
November	14074
December	15658
February	16126 — 17422
May	16618
January	16932
March	17641
April	17670

\* Short's Observations, &amp;c.—Heberden, p. 48.



## TABLE XVI.

COMPRISING

the aggregate numbers of the eight preceding Tables.

Summer	{	June	{	45176	}	132293	}	278871						
	{	July	{	42325										
	{	August	{	44797										
Autumn	{	September	{	47579	}	146573			}	603048				
	{	October	{	49489										
	{	November	{	49505										
Winter	{	December	{	53040	}	162957					}	106		
	{	January	{	56166										
	{	February	{	53751										
Spring	{	March	{	56340	}	161220							}	324177
	{	April	{	53398										
	{	May	{	51482										

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July	42325	* July	42325
August	44797	August	44797
June	45176	June	46682
September	47579	September	49165
October	49489	October	49489
November	49505	November	51159
May	51482	May	51482
December	53040	December	53040
April	53398	April	55177
February	53751	January	56166
January	56166	March	56340
March	56340	February	58069

\* In this column the months are supposed to contain an equal number of days, viz. 31. The calculation has been made by adding to each of the months which consist of 30 days, 1-30th of its number, and by adding to February 3-28ths of its number, after deducting 1-3th on account of leap years.

## TABLE XVII.

## PROPORTION OF DEATHS IN EACH MONTH OF FIVE YEARS,

From September, 1799, to August, 1804, in the Town of Plymouth\*.

	1799 1800	1800 1801	1801 1802	1802 1803	1803 1804	Total of five months.	
Summer { June July August	40 52 77	78 58 46	34 27 45	32 28 44	56 36 35	240 201 247	688
Autumn { September October November	35 35 57	93 83 77	55 41 31	25 41 31	51 64 73	259 264 269	792
Winter { December January February	63 70 73	68 60 71	55 54 55	27 43 41	82 102 79	295 329 319	943
Spring { March April May	63 57 56	70 78 74	66 53 43	33 44 42	101 103 61	333 335 276	944
Total	678	856	559	431	843	3367	3367

\* The numbers in this table denote the amount of burials registered, not only at the two parish churches, but at all other places of interment within the town. In applying the numbers, however, to any other purpose than that for which it is here introduced, it must always be remembered, that in a place so situated as Plymouth, especially during war, the proportion of burials is liable to considerable variation from accidental sources.

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## TABLE XVIII.

PROPORTION OF DEATHS IN EACH OF THE  
MONTHS OF FIVE YEARS,

as in the preceding table, the months being arranged in  
pairs, according to their respective distances  
from the middle of summer.

June	}	240	}	441	}	964	}	3367		
July	}	201	}							
May	}	276	}	523						
August	}	247	}							
April	}	335	}	594	}	1191				
September	}	259	}							
March	}	333	}	597						
October	}	264	}							
February	}	319	}	588	}	1212				
November	}	269	}							
January	}	329	}	624						
December	}	295	}							

TABLE XIX.

## PROPORTION OF DEATHS IN EACH MONTH OF SIX YEARS,

From September, 1799, to August, 1805, at the Plymouth Public Dispensary.

	1799		1800		1801		1802		1803		1804		Total of 6 months.	
	1799	1800	1800	1801	1801	1802	1802	1803	1803	1804	1805			
Autumn { September October November	4	1	4	3	5	6	3	2	2	2	2	21	68	
	2	2	5	6	3	4	4	7	3	6	4	20		165
	5	6	4	4	8	5	5	6	6	4	4	27		
Winter { December January February	5	6	4	6	8	6	6	5	6	5	4	33	97	
	3	3	6	6	6	8	5	7	7	2	2	35		285
	5	4	1	4	9	2	2	3	3	4	4	24		
Spring { March April May	4	2	4	8	0	0	0	2	2	3	3	29	72	
	6	3	3	3	2	1	1	2	2	3	3	19		120
	2	6	5	5	1	2	2	3	3	4	4	15		
Summer { June July August	2	2	3	3	2	2	1	2	2	2	3	17	48	
	2	5	5	5	1	2	2	3	3	4	4	16		
Total	44	52	54	42	50	43	285						285	

68 } 165 } 285  
 97 }  
 72 } 120 }  
 48 }

## TABLE XX.

PROPORTION OF DEATHS IN EACH OF THE  
MONTHS OF SIX YEARS,

as in the preceding table, the months being arranged in  
pairs, according to their respective distances  
from the middle of summer.

June	}	15	}	32	}	67	}	285
July	}	17	}	35				
May	}	19	}	50				
August	}	16	}	44				
April	}	29	}	62	}	94		
September	}	21	}	62				
March	}	24	}	62				
October	}	20	}	62				
February	}	35	}	62	}	124		
November	}	27	}	62				
January	}	33	}	62				
December	}	29	}	62				

## TABLE XXI.

NUMBER OF PATIENTS ADMITTED AT THE  
PLYMOUTH DISPENSARY,

in each month of six years, from September, 1799, to  
August, 1805, the succession of the months being ar-  
ranged in the order of their abundance in disease\*.

1	August	.	.	.	298
2	July	.	.	.	313
3	June	.	.	.	316
4	April	.	.	.	322
5	October	.	.	.	323
6	December	.	.	.	323
7	September	.	.	.	331
8	November	.	.	.	331
9	May	.	.	.	339
10	February	(371)			344
11	January	.	.	.	347
12	March	.	.	.	363
					<hr/> 3950 <hr/>

\* To obviate a possible objection it may be observed, that the facility of admission at this institution is at all times such as to preclude the idea of the admissions being influenced by any other cause than the wants of the applicants.

## TABLE XXII.

NUMBER OF PATIENTS ADMITTED AT THE  
PLYMOUTH DISPENSARY.

in each month of six years, from September, 1799. to  
August, 1805, the months being arranged in their natu-  
ral succession, and classed in seasons, as in Table XIX.

Autumn	{ September	{ 331	} 985	} 3950
	{ October	{ 323		
	{ November	{ 331		
Winter	{ December	{ 323	} 1014	
	{ January	{ 347		
	{ February	{ 344		
Spring	{ March	{ 363	} 1024	
	{ April	{ 322		
	{ May	{ 339		
Summer	{ June	{ 316	} 927	
	{ July	{ 313		
	{ August	{ 298		



The prevailing opinion in this country of the influence of the seasons on disease and mortality is justly observed by Dr. Heberden to subsist in opposition to the evidence of the clearest facts. Of these facts some are passing in constant and daily review, while others are derived from less obvious, though more conclusive, sources. But the prejudice, which prevails in defiance of the former, receives a very limited correction from the latter; while it acquires continual support by deriving its origin from various sources. The influence of the ever-varying condition of the atmosphere of this island on the animal spirits of its inhabitants, has been conceived to give a colour to opinion in many instances. That in the present instance it should prove a source of erroneous judgment, is little to be wondered at. Those who, to employ their own metaphorical and delusive expressions, feel their bodies *braced*, their nerves *strung* with new vigour, and their spirits *elastic*, will naturally infer, that the sharp air, the keen frost, the serene

sky, to which these effects are ascribed, must be more propitious to health, than the warm, moist, and foggy atmosphere, in which they had previously been oppressed with languor, and enfeebled by *relaxation*. Hence is derived the universal interchange of congratulation on the healthfulness of the weather, when to a mild and open November succeeds the keen frost of January or December.

At a period, happily remote from our times, when England was subject to the frequent visitation of pestilential disease, the approach of summer was dreaded as the harbinger of the plague; and winter was hailed as the deliverer from its ravages. And in our own times we have had such frequent occasions to lament the wide-wasting ravage of disease in the warm climates of the western world, where British valour sinks into an untimely and inglorious grave, that analogy, the fruitful parent of fallacious conclusions, leads us to associate the ideas of warmth and contagious distempers in our

own temperate climate. But the fevers of contagious origin in this island prevail undoubtedly to a greater extent in the winter than in the summer ; and the explanation of the fact is found, in part, sufficiently obvious, in the less ventilation of the houses of the poor, in which contagion is generated, in winter than in summer. Sparingly provided with the supplies of artificial heat, they sedulously exclude the entrance of external cold ; and preventing as much as is possible the renovation of the air in their rooms, they breathe with little intermission a highly vitiated atmosphere during a considerable length of time.

Perhaps in considering the origin of the popular belief, the force of early impressions and early associations in those classes of society, on whom, on most occasions, depends the cast of public opinion, may be entitled to some attention. In this, as in many other instances, we trace the influence of classic lore. From the poets of Greece and Rome we

imbibe early notions of the beauties of spring. Their enlivening descriptions, true to the feelings of their authors in the genial climes of Italy and Greece, have, with poetic licence, been transferred to our northern skies; and the shivering inhabitant of Britain talks of the approach of spring in the language of Arcadia.

But it is not to poetic description alone, the influence of which is insensibly so extensive, but to the pages of science also, that this illusion is to be traced. From the dictates of Hippocrates and Celsus originated, we may presume, the creed of the physicians of modern Europe on the salubrity of the seasons. “*Saluberrimum ver est;*” (says the elegant physician of Rome) “*proximè deinde ab hoc hiems; periculosior æstas; autumnus longè periculosissimus;*” and in the succession of eighteen centuries this observation has not become less applicable to the country in which it was originally made. In modern times the records of Marseilles and Montpellier, which may be cited in defect of

evidence immediately derived from Italy, correspond very nearly with this description of the year. At the latter place, the mortality from June to November exceeds that from December to May nearly in the proportion of four to three. At Marseilles, the difference is on the same side, but not in the same degree.

The strongly contrasted winters of 1793 and 1795 will, in all probability, be adduced in future, as irrefragably refuting the opinions, which in this island attribute unhealthiness to a mild, and healthiness to a severe winter. But, although this instance will justly be appealed to, as placing the fact in a striking point of view, yet the admission of the general position cannot reasonably be expected, without the production of evidence in its support on a much more extended scale. Of this nature is the proof adduced by Dr. Heberden from the London bills of mortality, supported by the concurrence of similar conclusions deduced from registers in some other towns in England.

The principle also, on which the conclusion is founded, receives confirmation from records at Paris and throughout the kingdom of Sweden.

In the preceding tables (from VIII. to XXII.) is collected and arranged various evidence on the question, as far as it relates to this kingdom, derived from the recorded mortality at different periods and at different places; and particularly, in conformity with my design of illustrating relative local mortality, in this town and its vicinity.

In the division of the year into four seasons, the boundaries have neither been assigned with precision by nature, nor definitely prescribed by custom. In the distribution of the months into the respective seasons adopted in these tables, no arrangement more correspondent to nature seemed practicable, while an equal portion of time is to be allotted to each season. The protracted arrival of summer for many years past justifies the as-

agement of its commencement to the month of June, and the mild, open, and unclouded days of many a November should rescue this calumniated month from being delivered over to the gloomy period of winter. But, however this disposition may be objected to in the kalendar of the naturalist, the medical inquirer will, it is presumed, find in the tables themselves sufficient reasons for its adoption.

In deducing inferences from the sixteenth table, no risk is incurred of erroneous conclusions from the operation of partial causes. It includes a mortality to the extent of six hundred thousand persons, occurring at various periods in the course of the last seventy years of the last century, in towns and in the country, in places remote from each other, and subjected by situation to as great variation of climate as can occur in so limited a space. The counties of York, Middlesex, Lancaster, and Devon, from their relative position, may be presumed to afford a

mean of the variations of the weather, indicated by the barometer, thermometer, and hygrometer, in the southern division of the island.

From this table, thus comprehensively formed, it appears, that the mortality is greatest in winter; but little less in spring; considerably diminished in autumn; and in summer much further reduced. The difference between the mortality in summer and winter is nearly as four to five; and if the summer and autumnal period be contrasted with the winter and vernal portion of the year, it will be as six to seven. Retaining this table as a standard of comparison, in examining the other tables, from which it is formed, a generally prevailing correspondence will of course be expected. Some variations in degree will, however, be found, and some deviations from the general course. The difference between the winter and summer half-year is less in the London table than in any of the others, and greatest in Warrington, Ches-



ter, and the country parishes in Devonshire. May it hence be inferred, that, where the relative general mortality is least, the proportion between the mortality in summer and winter will be greatest? For example, in the district in Devonshire confined to the three towns, the annual mortality is 1 in 25<sup>\*</sup>; in the district comprising three adjacent country parishes, it is 1 in 45: in the former, the deaths in the summer half-year are to those in the winter as 6 to 7, in the latter as 5 to 7. Or, is the difference of proportion in London to be ascribed to this circumstance, that the metropolis has less than the usual proportion of persons of advanced age, whose deaths happen most frequently in winter, owing to the retirement of many towards the close of life, and the increased proportion of people of

\* Perhaps the annual mortality is in this instance stated too high; the grounds upon which it is so stated, are mentioned in page 151 *note*. For the purpose, however, for which the statement is here made, it is sufficient that the mortality be admitted to be greater in large towns than in the country, which is undeniable.

middle age derived from the perpetual recruits, which the population is receiving from persons of that description?

The deviations from the general inferences are chiefly to be found in the eleventh table. In the country parishes, from the registers of which it is formed, the mortality is greatest in spring, and is particularly excessive in the months of April and May. As in winter it is comparatively less, so in autumn it is rather greater. May it from these facts be induced, that life is more directly subjected to the influence of weather in the country than in towns; and that the diseases of spring and autumn, particularly of the former, are those to which the inhabitants of the country are most obnoxious? If the limited extent of the table forbid the confident adoption of these conclusions, to future observations must be left their establishment or refutation.

Further exceptions occur in the eighth, twelfth, and fifteenth tables, and also in

the tenth. In the three first, spring is found to exceed winter in fatality, and in the last summer yields in healthiness to autumn.

If an exception be taken to the ratio of comparative mortality deduced from the aggregate table (XVI.) on account of the influence of the London table, which has been shewn to differ materially from the others, the necessary correction will probably be made, and an approximation to a fair general average obtained, by stating the deaths in the winter half to exceed those in the summer half of the year by one fifth of the whole. But if no such exception be taken, the mortality in the different seasons may be apportioned on the following scale, presuming upon the grounds formerly stated, the whole annual mortality of Great Britain to amount to 275,000.

Mortality in summer	60,400	} 275,000
autumn	66,800	
spring	73,650	
winter	74,150	

To each of the tables is subjoined a succession of the months in the order of their fatality. If, for the purpose of comparison with other months, an equal number of days be assigned to February, this month will be found most abundant in deaths. In one or two instances only it is exceeded by March and April. June, which is classed in the most healthy season, yields, in many instances, in salubrity, to some of the autumnal, and even winter months.

If from the records of death in large districts, in all the various forms in which it assails mankind, our attention is directed to its more confined operation in a small circle, where it acts through the medium of decided disease, it will appear from the deaths at the Dispensary in six years, that the difference in the influence of the seasons is still more strikingly contrasted. From the nineteenth table it will be found, that the deaths from December to May inclusive exceed those in the remaining months in the proportion

of three to two; and that the mortality in the winter is double to that in the summer period.

But it may be justly observed, that the scale of mortality in the different months is not a criterion of their respective unhealthiness, if that is to be estimated by the frequency of disease. If in times past, when vaccination had not yet extended its security to millions, influenza had prevailed in the spring, and small-pox had raged in autumn, the former season might doubtless have been deemed the most sickly, although the latter would have been distinguished by a dreadful superiority in fatality. But exclusively of extraordinary sources of variation, the proportion of death will certainly not be found to correspond with the proportion of disease occurring in the same month; neither will so marked a difference be observed to subsist between the unhealthiness of different months, or seasons, by the one criterion, as by the other. At least these conclusions seem to be war-

ranted by the monthly returns of admission to the Liverpool Dispensary during seventeen years, and to the Plymouth Dispensary during six years.

At Liverpool, the succession of the months, in respect to the frequency of disease, is in the following order: March, April, January, October, May, December, November, February, June, September, July, August. At Plymouth, the succession upon the same principle is March, January, February, May, November, September, December, October, April, June, July, August; and the difference in the two months, which form the extremes, is only as eleven to nine. If the contrast be extended to longer periods of time, the twenty-second table shows, that the proportion of patients admitted at the Dispensary in the summer is to that in the winter as nine to ten, and that the proportion in summer and autumn is to that in winter and spring as nineteen to twenty.

The popular opinion of the extensive prevalence of autumnal diseases is not confirmed by this statement, in which autumn maintains the second place among the seasons in the scale of salubrity. The refutation, however, of this opinion cannot be rested on inferences derived from the limited period of six years, in which the autumnal epidemic cholera has not been of frequent occurrence.

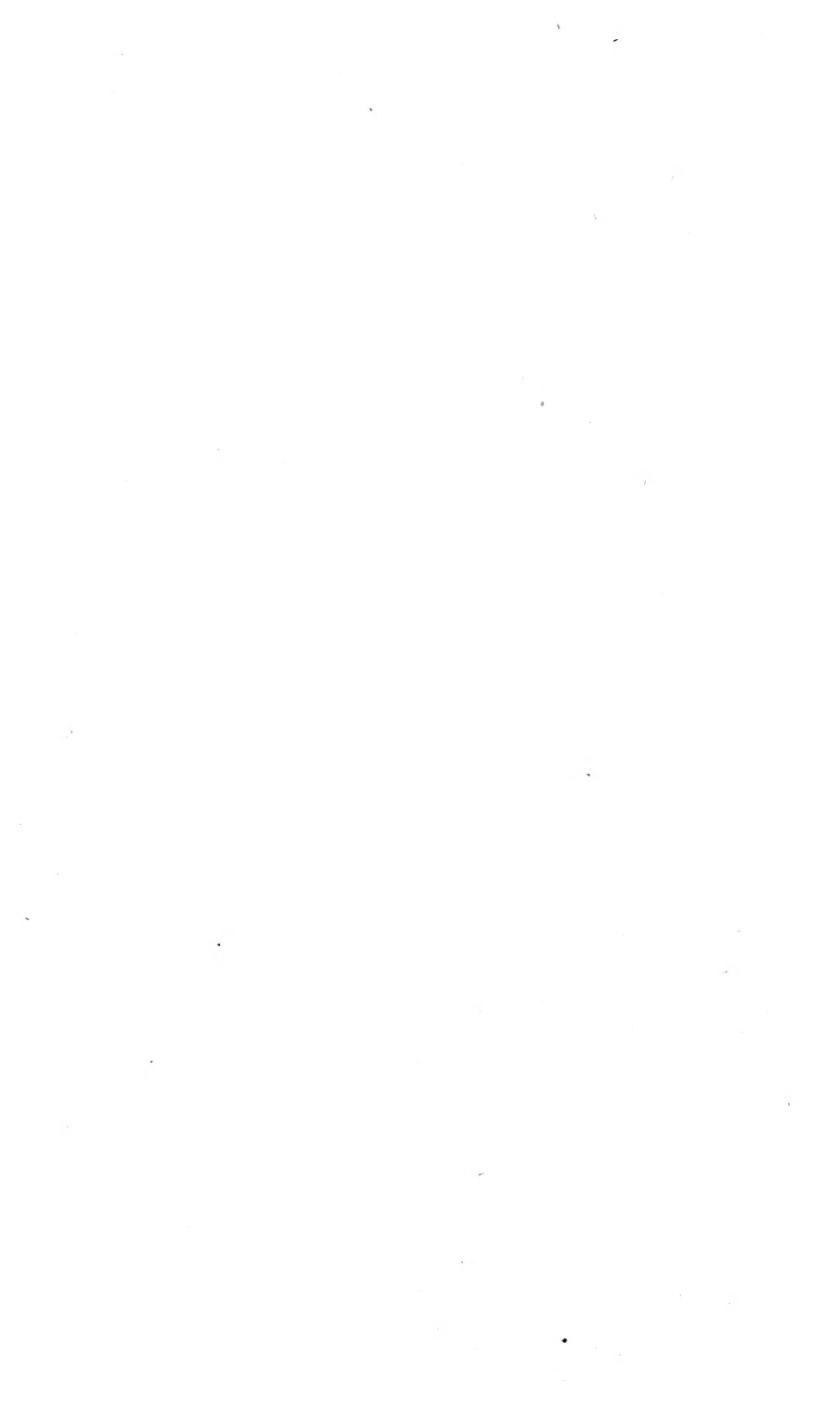
These and many other points may easily be determined, if they shall be deemed worthy of further investigation.

Upon the whole, sufficient proof seems to have been adduced, that in this country the warmer months are most favourable to the health of the inhabitants ; and that disease and death extend their influence with the increase of cold in our ordinary winters. That their influence is prodigiously augmented by any extraordinary degree of cold, the winter of 1795 has placed beyond all question.

Sufficient proof has also been adduced, that the prevalent diseases of Great Britain are those which are most liable to be influenced by temperature. Few subjects relating to health are so generally misunderstood as the effects of temperature, or so completely under the control of popular prejudice. The lives, and what is of infinitely more importance to human happiness, the health of numbers will be preserved, when it shall be better and more generally understood. At present it is peculiarly unfortunate, that the prejudice in favour of cold contributes, in many instances, to augment the disposition to disease ; and the prejudice against its employment too often deprives the physician of the most efficacious mode of combating disease in existence.



## APPENDIX.



No. 1.

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PROPORTION  
OF  
MORTALITY  
TO  
POPULATION.

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IN the preceding pages, when assuming the annual mortality in Great Britain to be to the population in the proportion of one to forty, the difficulty of ascertaining this relation in general was adverted to. It may not, therefore, be superfluous to subjoin the following observations relating to this subject, from the works of

Dr. Price, together with a table, the materials of which, with some exceptions, have been drawn from the same source.

“ The ingenious Susmilch, to whose works (says Dr. Price) I owe my observations concerning Berlin, makes the proportion of people who die annually in great towns to be from 1 in 28 to 1 in 24; in moderate towns, from 1 in 28 to 1 in 31; and in the country, from 1 in 40 to 1 in 50. The observations and facts, produced in this work, prove, I think, that these proportions may be more truly stated as follows :

In great towns, from 1 in 19 or 20 to 1 in 23 or 24.

In moderate towns, from 1 in 23 to 1 in 28.

In the country, from 1 in 35 or 40 to 1 in 50 or 60.

“ To these proportions exceptions will, however, occur in particular places from local circumstances.

“ Susmilch supposes the proportion of inhabitants of the country to those of towns to be  $3\frac{1}{2}$  to 1. This, I think, he

has rendered sufficiently probable in Pomerania, Brandenburg, and some other countries. In well-peopled countries, the proportion may be just: in Sweden, it is computed that the inhabitants of the town are to those of the country only as 1 to 13."

Price on Reversionary Payments,  
vol. i. 5th ed.

TABLE XXIII.  
*Proportion of the annual Mortality to the Population in various Parts of  
 Europe.*

1763	Stockholm . . . . .	1 in 19		
		—	20.7	London.
		—	20.6	Edinburgh.
1761 to 1771	Rome . . . . .	—	21.5	
1747 — 1776	Amsterdam . . . . .	—	22	Dublin . . . . . 1695
		—	24.7	Liverpool.
		—	24.5	Norwich.
		—	25	Plymouth* . . . . . 1799—1804
	Berlin . . . . .	—	26.5	

1787	Vienna . . . . .	—	26.4	Shrewsbury—Northampton.	—
		—	27.7	Birmingham . . . . .	1770
		—	27.5	Newbury (town) . . . . .	1747—1765
	Petersburgh—Breslaw . . . . .	—	28	Manchester (town) . . . . .	1773
		—	29.7	Warrington.	
	France . . . . .	—	30		
		—	31	Speen, Berkshire . . . . .	1724—1757
1754	Moscow (Prov.)—Wirttemberg (Duchy)	—	32		
	Sweden . . . . .	—	35		
		—	36	Chester . . . . .	1772—1781
	Naples . . . . .	—	37		
1777		—	39	Blandford . . . . .	1772

1098 Parishes . . . . .	—	43	Swinderby, Lincolnshire . .	1771
	—	44		
Pays de Vaud . . . . .	—	45	Plympton, Plympton St. Mary, Plymstock . . . .	1799—1801
	—	47	Ackworth, Yorkshire.	
Norway . . . . .	—	48		
	—	49	Biddulph, Staffordshire . .	60 years.
106 Parishes—Madeira . . . .	—	50	A country Parish, Hampshire	90 years.
	—	54	Stoke Damarell, Devonshire .	1733
	—	56	Manchester Parish, exclusive of town.	
	—	56	Okeford, Devonshire . . . .	1770
	—	68	Moreton, near Manchester.	



\* As in a town, circumstanced as Plymouth is during war, the calculation of an average mortality is attended with great difficulty, and may, in this instance, be very erroneous, it will be proper to state the grounds upon which the proportion has been assumed. The population has been estimated at 16,000, and the annual average of deaths at 640. This average was made from the years 1799, 1800, 1801, 1803, and 1804: the year 1802 being excluded as a year of peace. This exclusion was judged necessary, because the population having been taken during war, the deaths ought to be averaged from years of war also, provided a allowance be made for military deaths, the military not being included in the enumeration of the inhabitants. This allowance has accordingly been made by deducting thirty deaths annually on this account. A nearly similar proportion of mortality results from confining the comparison of burials with inhabitants to one of the two parishes in the town, namely Charles, in which parish, the burials are but little affected by the mortality of the military. In common with other large towns, there is the chance of inaccuracy from the difference between the numbers carried out and brought in for interment. There are, however, no particular reasons for suspecting this to be in any great disproportion at this period.

† In this parish, the inhabitants of the town are stated to be five in twelve, and those of the country seven in twelve.

No. 2.

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TABLE XXIV.

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*POPULATION, &c.*

OF

PLYMOUTH, PLYMOUTH-DOCK, AND STONEHOUSE,

INCLUDING THE PARISHES IN WHICH THEY ARE SITUATED,

FROM THE RETURNS TO PARLIAMENT IN 1801.

Parishes.	Uninhabited houses.	Inhabited houses.	Families.	Males.	Females.	Employed in agriculture.	Engaged in trade, &c.	Not comprised in the preceding classes.	Total.
Saint Andrew, Charles,	4	1071	2107	3549	5178	29	1524	7174	8727
in Plymouth,	23	666	1892	3128	4185	74	1919	5320	7313
Stoke Damarell*,	27	1737	3999	6677	9363	103	3443	12494	16040
East Stonehouse,	42	2352	5970	10075	13672	750	3650	19347	23747
	20	358	739	1264	2143	10	215	3182	3407
Total	89	4147	10708	18016	25178	863	7308	35023	43194

\* In the year 1733, the inhabitants of the parish of Stoke Damarell were found, by a survey made by the Rev. W. Barlow, to amount to 3361. In the same year, according to the register, the baptisms were, of males 61, of females 61, total 122; the weddings 28, and the burials 62.

Phil. Transact. vol. 31.

**TABLE XXV.**  
**RELATION OF DEATHS IN SUMMER AND**  
**WINTER, AT DIFFERENT PLACES.**

Period of calculation.	Places.	Deaths.		Proportion.
		Summer.†	Winter.†	
13 years	<sup>2</sup> Sweden . . . .	18880	20690	10 to 11
5 {	<sup>2</sup> Eccles, near Man- } chester . . . }	415	455	10—11
40	<sup>3</sup> Blandford . . .	617	725	10—11.8
15	<sup>4</sup> London . . . .	122611	146917	10—12
60	<sup>2</sup> Vevey, Switzerland	1697	2140	10—12.5
40	<sup>3</sup> Blandford . . .	645	829	10—12.8
20	<sup>1</sup> Gainsborough . .	590	765	10—13
6	<sup>1</sup> Plymouth . . .	1103	1446	10—13.1
5	<sup>2</sup> Stockholm* . . .	1139	1515	10—13.3
	<sup>2</sup> Edinburgh . . .			10—13.3
9	<sup>2</sup> Manchester . . .	1788	2427	10—13.3
	<sup>25</sup> country towns } in England . . }	52508	66357	10—13.5
7	<sup>2</sup> York . . . . .	956	1210	10—13.5
3	<sup>2</sup> Chester . . . . .	340	478	10—14
8	<sup>2</sup> Warrington . . .	692	968	10—14
6 {	<sup>2</sup> Plymouth Dispen- } sary . . . . }	69	121	10—17

1 1 Summer includes June, July, August, and September; Winter includes December, January, February, and March.

2 2 2 2 2 2 2 Price on Reversionary Payments, 5th ed. ii. 270, *note*.

3 3 Phil. Trans. vol. 68. In the first instance, the deaths from small-pox are excluded.

4 Short's Observations.—Hebden, 48.

5 Tab. XVII. completed to sixty years, 1799 to 1804 inclusive.

6 Short's Observations.—Hebden, 47.

7 White.—Hebden, 49.

8 Table XIX.

\* In the note above cited from Price, the number of deaths at Stockholm are transposed as to the seasons; but as this place is not cited as an exception, the supposed error has been here corrected.



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